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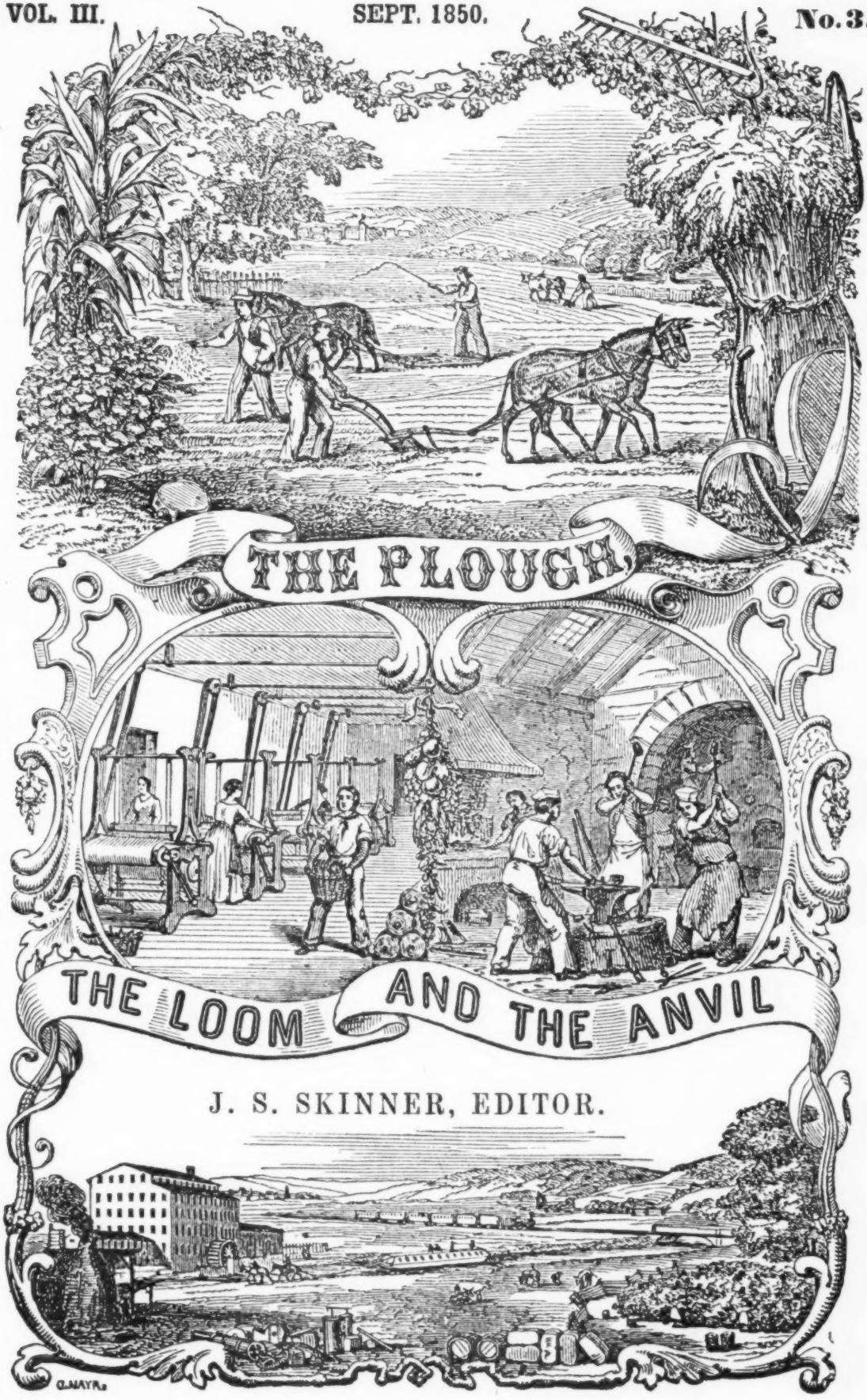

J. S. SKINNER, EDITOR.

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FRANKLIN COLLEGE, *July 15th*, 1850.

JOHN S. SKINNER, Esq.

MY DEAR SIR:—You suggest in the July number of your very ably conducted periodical, that you can send a half an ounce of almost any kind of seed for experiment. Not knowing what you have, I can ask for nothing; but as it is my motto to "prove all things and hold fast that which is good," I very respectfully request you, at your leisure and in your own way, to send me anything you may have to spare.

Perhaps my reports might be valuable to you.

Sincerely, your friend and fellow-labourer,

J. JANNING.

J. S. SKINNER, Esq.

NOTE TO THE ABOVE.—What we meant was this. We have no collection or store of seed or implements, or any sort of connection with any—but knowing how many persons in the country, who have no facilities for getting rare seed, would yet make particular trial and report of them; what we meant was, that we would with pleasure go to a seed store and buy, and send gratuitously, any small quantity that a friend of this journal should designate, that might not be within his own reach. That was all.

When postmaster of Baltimore, from which we were Van Burened some years ago, and when conducting the "*American Farmer*," we paid a clerk whose chief business was to put up rare seed and grain brought to us chiefly by officers of the navy (to which we had belonged), and which we sent all over the Union, in such numbers, as that, at the high rate of postage then prevailing, the cost of our correspondence would have been upwards of $3000 a year! and this statement we repeat, notwithstanding the covert and malignant attempt of a certain Professor POMPOS LOGOS unprovokingly to impeach it with "pencil in hand."

THE AGRICULTURAL FAIRS come off: That of the Maryland State Agricultural Society, at Baltimore, on the 23d, 24th, and 25th of October.

New York State, at Albany, on the 3d, 4th, 5th, and 6th of September.

Maryland Institute, for the Promotion of the Mechanic Arts, on the 16th, to close on 31st October.

Montgomery County, Md., at Rockville, 2d Thursday in September.

Prince George's County, at Upper Marlow, on the 30th and 31st October.

Charles County, time not specified.

The Great Fair of the Charitable Mechanics' Association, at Boston, commences on the 16th of this month. The Editor has accepted an invitation to deliver the address.

The Plough, the Loom, and the Anvil.

VOL. III. SEPTEMBER, 1850. No. III.

THE HARMONY OF INTERESTS:

AGRICULTURAL, MANUFACTURING, AND COMMERCIAL.

BY H. C. CAREY.

THOUGH the heading of this next chapter from Mr. Carey, in reply to a circular from the Secretary of the Treasury, may be all-sufficient, In the existing temper of the public mind, to rivet attention to its contents, yet is there not danger that the very excitement which begets curiosity to see what is there said, in a journal at once agricultural and national on the all-absorbing topic of slavery, may itself prove unfavourable to that deliberate and impartial consideration which is indispensable to the perception of truth? Early impressions, with their concomitant prejudices, are, under all circumstances, great barriers to successful investigation; and the more especially in cases like this, where preconceived views of self-interest combine with more or less of excitement and passion, to confuse and mislead, rather than to enlighten the mind of the inquirer.

He who advances, for the first time, as the basis of his theory, the idea that in proportion as the labour of the slave becomes more and more profitable, will the chain which binds him to his owner become weakened, even to the final dissolution, by common consent, of the institution itself; seems at once to maintain a paradox so at war with the general impression, and common course of things, as to need more patience and candour than is usually awarded to those who strike thus boldly at our old and long-settled opinions; and hence it is, that without attempting here to enter into the merits of the question, we feel called upon to invoke for the writer a fair and candid hearing. Our own maxim, as is well known, leading us to hear all sides, we will venture only to remind the reader that the most important discoveries in science, such even as the revolution of the planets themselves, and the circulation of the blood, have been at first denounced and punished as sacrilegious, or ridiculed as empirical innovations on the established belief of the world.—*Edit. P. L. & A.*

CHAPTER SIXTEENTH.

HOW PROTECTION AFFECTS THE SLAVE AND HIS MASTER.

PROTECTION tends to increase the productiveness of labour. Many of the labourers of the Union are held as slaves, and protection must tend to render their labour more valuable to their owners, who may, therefore, be rendered less disposed to part with them. If such were likely to be the fact, protection would tend to perpetuate slavery, and all who were opposed to its continuance should advocate free trade.

By all English writers, and by many among ourselves, it is held that the way to terminate the existence of slavery is to destroy the value of slave-labour. With that view the British government is urged to prohibit slave-grown sugar, and to encourage the extension of the cotton culture in India—the wretched Hindoo, who labours a whole month for two rupees, (one dollar,) out of which he feeds and clothes himself, being held to be a freer man than the well-fed, well-clothed, and well-lodged labourer of Virginia or Kentucky.

Throughout the world, men have become free as wealth and population

have grown, and as land has increased in value. In the early days of Rome, when Latium was filled with prosperous cities, land was valuable, and men were free. With the gradual depopulation of Italy, land lost its value, and large masses accumulated in the hands of great proprietors surrounded by slaves. So was it in Attica. In the days of Solon, land was valuable and men were free. In those of Herodes Atticus, land was valueless and men were slaves. The richest lands of India have been abandoned and are now jungle, and the descendants of the little village proprietors of the last century now sell themselves to slavery in Jamaica and Demerara. In Russia, land has no value. The value of a property is estimated by the number of its serfs. In Belgium, land has great value, and the people are the freest in Europe. With the gradual increase in the value of land in England, men became more free, whereas with every step tending to increase dependence on Poland and Russia for food, land is becoming less valuable, labourers are becoming more and more the inhabitants of parish work-houses and the slaves of parish beadles, and landowners are becoming more and more anxious to expel the population that would otherwise give value to the land. The land of Ireland has almost lost its value, and the labourer of Ireland has become a slave to the caprices of masters who regard him as an encumbrance to be gotten rid of by any process, however cruel.

Increase in the value of land tends towards freedom; decrease tends towards slavery. If protection tends to add value to land, it tends to the promotion of freedom; if it tends to diminish its value, it tends to the maintenance of slavery.

The least valuable land is that in which men are most rare; the most valuable is that in which they most abound. The cause of the difference between the two is to be found in the difference in the labour required for the performance of exchanges. The hills of Limburg, the poorest part of Belgium, rent for from six to eight dollars; and for flax land in Flanders, ten to twelve dollars per acre is a common rent; while cotton-producing land of the highest quality may here be had, *in fee*, for *one-eighth* of the latter sum. The one has a market on the land, and the other has not; and in this single and simple fact may be found nearly the whole reason for this enormous disproportion.

The man who lives in Arkansas has to employ numerous men, horses, steamboats, ships, and warehouses, in the performance of every exchange, and the consequence is, that he receives for the produce of his land little more than compensation for his labour, and his land has scarcely any value. He can raise for market little else than cotton, of which the earth yields but little, for which reason it commands a price that will enable it to bear transportation. His surplus corn is almost valueless; while to attempt to raise for market potatoes or turnips, of which the earth yields by hundreds of bushels to the acre, would be ruinous.

The man who lives near New York exchanges directly with the consumer of his products and the producers of the commodities that he desires to consume. He can raise potatoes, turnips, and cabbages, bulky articles; or strawberries and raspberries, delicate ones—none of which will bear transportation. He sells his milk, and is not compelled to convert it into butter or cheese. He is not required to convert his corn into pork, with a view to diminishing its bulk and enabling it to go to market. His products are all consumed near him, and he can readily return to the land the refuse, increasing its productive power from year to year. The amount yielded is far more than wages for his labour, and the whole surplus is the rent he derives from his land, fifteen or twenty years purchase of which is its market value.

That value is three, four, five, or six hundred dollars per acre, while land in Arkansas is now offered in free gift to those who will come and pay the taxes. The sole cause of the difference is, that the owner of the one exchanges directly with the men who make hats and coats, shoes and stockings, ploughs and harrows, and the other does not. To make the land of Arkansas as valuable as that near New York, it would be necessary that its owner should exchange for hats and shoes, ploughs and harrows, as freely as does the man of New York; that is, he must make a market on the land for the products of the land. The return to labour would then be large, and the value of man would rise; but all that was returned over and above the wages of the labourer would be rent, and the value of land would rise. Men would then become free; first, because the cost of raising a slave would be far more than he was worth when raised; and, second, because the land would be too valuable to be cultivated by slaves.

The man of Wisconsin can afford to raise hogs, because corn is but twenty cents a bushel. The man near New York cannot, because corn is worth sixty cents. The man of Arkansas can afford to raise slaves, because they are worth as much as they cost to raise. The man near New York could not, because they would cost him more than their services would repay. Had Arkansas a market on the land for all the products of the land, hired labour would be found so much cheaper that no man would desire to raise a slave.

The man who owns valuable machinery cannot afford to employ poor labour. The interest on his factory is as great if the looms produce but twenty-five yards per day as if they produced fifty. With the former quantity he would be ruined. With the latter he would grow rich. The slave will give him the one—the freeman the other. To make the slave work like the freeman, he must have an inducement—that is, he must receive wages.

Were a large landholder near New York offered the services of men, their wives and families, on the same terms as the planter has those of his slaves—to feed, clothe and lodge them—he could not profitably accept them; and yet the money-price of such labour is at least *twice* as great as at the South. The price of their food, however, would be *thrice* as great, and they would require more clothing, and their children must be educated; and to obtain all these things there would be needed the exertion of the man working for himself, and the economy of one who looked to the future for himself and his family. Were such an offer accepted, the party accepting would speedily find that his people produced less and wasted more than those of his neighbours, and that the rent of his land was diminished by the arrangement.

Place in the Southern States machinery for converting into cloth half a million of bales of cotton, and for producing half a million of tons of bar-iron, and there would be created a great demand for labour. The facility of obtaining iron in exchange for corn and cotton would cause the making of thousands of miles of railroad, and here would be a new demand for labour. The mills, the furnaces, and the roads would bring towns, filled with tailors, shoemakers, hatters, blacksmiths, makers of ploughs and harrows, looms, spindles, and steam-engines, and here would be a new and large demand for labour, while the number of labourers would not be increased. It would then become necessary to economize labour because of its increased value. How could it be done? The slave would do no more than his accustomed work, without an inducement, and that is to be found in wages. The increased product of his labour would thenceforth go to himself.

Large crops would then be obtained in lieu of small ones, and one hundred bushels of corn, or one hundred pounds of cotton would then buy more cloth or iron than now are obtained for three. The increased value of crops would raise the price of land, and if that should average but ten

dollars per acre over the South, it would amount to four thousand millions of dollars, and thus would the planters be made rich.

Here, then, are two commodities, man and land, both increasing in value, but the increase in the one goes to the man himself, while that of the other goes to the owner. What would be the effect of this on their market value? Where property is steadily growing in value, it sells for twenty, thirty, and even more years' purchase of its rent. Such would be the case with land.

When property is decreasing in value, it sells for six, eight, or ten years' purchase of the rent that can be commanded for its use. Such would be the case with the slave. With the increased productiveness of his labour he would be obtaining for himself an increased *proportion*, leaving a diminished one to his owner, and thus would the value of the slave be transferred to the land.

To raise a slave would then become too costly. What then would become of the children? The *parents*, everywhere, make sacrifices for their offspring, and by them alone can children be raised, where land is valuable. To induce those sacrifices they must know that they are working for *their own* children, and not for *their master's* slaves.

With increase in the value comes the division of land. Great plantations would become small ones, each of which would yield more than is now yielded by the whole. Small farms would come, cultivated by negro tenants, and thus step by step would men, their wives and children, become free, as their late owners were becoming rich.

To accomplish both these objects it is necessary that the people of the South should have mills and furnaces to make a market on the land for the products of the land. Those they cannot have without protection against the monopoly system by which they are now being exhausted. The abolitionist and the slaveholder should then unite in the demand for the adoption of measures tending to the abolition of the English monopoly of machinery.

The former would, however, say that the process would be too slow. On the contrary, it would be most rapid. Had the tariff of 1828 continued in existence to the present time, the lands of the South would now be trebled in value, and the slaves of the South would now be far advanced towards freedom.

The latter would say that they would lose their property. The answer would be that for every dollar of diminished value in man, they would have five, or ten, or twenty in the increased value of land. It would be precisely as land became valuable that man would become free.

The Union is now agitated by the question whether or not slavery shall be carried beyond its present limits. The agitators are determined to force the Wilmot proviso upon the South, and the people of the latter declare that they will dissolve the Union rather than submit to it. Neither is disposed to penetrate below the surface to understand the cause of difficulty.

If a demand for labour existed in the Slave States, consequent upon making a market on the land for its products, the necessity for *emigration* would pass away, and *immigration* would begin. The people of the South would not then desire to go to California, nor would those of the North deem it necessary to pass laws to prevent them from so doing. All the discord between the different portions of the Union results from the existence of the colonial system, which it is the object of protection to terminate, and thereby raise the value of land and of man, black or white, throughout the world.

This question has thus far been looked at as one of dollars and cents merely, and such is the light in which it should be examined. When it can be shown to be the *interest* of a body of men to pursue a certain course, we may safely calculate upon its being pursued by a large portion of them; but

when we confine ourselves to showing that it is their *duty*, and that in the performance of that duty they must neglect their interests, we may as safely calculate that very few will follow in the course thus indicated. The agitators of the North would impair the value of property and destroy the peace of the South, while deteriorating the condition of the objects of their sympathy, and all this they would do that *others* might be compelled to perform their duties. It is time that the reasonable men, North and South, should understand each other, and determine to adopt the course that would give value to labour and land, and thus relieve themselves from the dangers incident to the agitation of men who would destroy the value of both.

With every step of improvement in the value of land, there would come improvement in the physical and moral condition of its owner. Throughout the South, there is even now a growing indisposition to hold men in slavery; but how rapidly and widely would that feeling extend itself were the owners of land and of slaves to feel themselves growing richer instead of poorer, as is now the case. The cause of emancipation has been going backwards for the last twenty years, and those who desire to know why it is so have only to look to the fact, that, in 1845–6, 600,000,000 of pounds of cotton would not bring as much iron to the plantation as 100,000,000 would have done thirty years before, or 275,000,000 only a dozen years before.* The consequence has been a growing tendency to the abandonment of land, and an increased regard for that species of property which was capable of being transferred, which land was not. Harassed and annoyed by abolitionists on the one hand, and on the other by a constant deterioration in the value of the only crop upon which he has been accustomed to depend, and compelled to change from that to sugar or to wheat, it is no matter of surprise that there should have been produced the state of feverish excitement now witnessed everywhere in the planting States, and which must increase unless the loom can be brought to take its place by the side of the cotton.

It is a common impression, that the people of South Carolina have exhausted their rich lands, and that they are moving away from poor ones, yet nothing can be more erroneous. They commenced upon poor soils, as has been done in every country of the world, and they are now flying from meadow-lands capable of yielding the finest artificial grasses, of which they have millions of acres untouched; from river bottoms uncleared, from swamps undrained, and from marl, and lime, and iron ore, all of which exist in almost unlimited quantity. Nature has done for that State every thing that could be done; but man has, as yet, done nothing but exhaust the poor soils upon which the work of cultivation was first commenced, and therefore it is that their agricultural reports, and their newspapers repeat, year after year, the question, "What shall the cotton planters do?"

"This," says the editor of the South Carolinian, "is a question daily asked by our planting friends. There seems," he continues, "at present great solicitude as to the policy which is to be pursued by them in pitching their next crop. We hear the cry of less cotton and more grain ringing from one end of the State to the other. We are not surprised that many planters who plant heavily should say their present crop will bring them in debt if the ruinous prices continue much longer. No planter can make both ends meet who receives only four or five cents for his cotton, and has to pay the present exorbitant prices for bagging, bale rope, pork, mules, sugar, coffee, salt, and iron. Mules are high, pork is high, bagging and rope are up to the prices of the twelve and fifteen cent times of cotton, and sugar, coffee, iron, and salt steadily stand at the old rates. If to expenditures for these necessary articles, the planter has to add his negro clothes, shoes, hats, and blankets, he will have nothing left to remunerate him for his labour.

* See page 16, *ante*.

These are really matters which they should ponder over, and a system of planting, which does not repay for the labour and investment of capital engaged in it, we reasonably think would soon be abandoned. But it will not be. Our planters are taught no other systems; they do not know how they will supply the vacuum which would be made by an immediate abandonment of the cotton crop. It would take several years before they could perfect, with the strictest economy, those arrangements which would render them entirely independent of it as a marketable crop. Therefore the step taken should be wisely considered before adopted, and the utmost caution should be observed in making, what we sincerely believe would be, if once begun, a radical change in our system of agriculture. We therefore advise, for the coming year, a reduction simply of one-third of the cotton crop throughout the State—devoting, at the same time, the land thus thrown out of the cultivation of this crop to the production of grain and the increase of labour, which would thus be given, to the proper manuring and improved tillage of the cotton planted and the general improvement of the plantation. By this process the cotton lands would be increased in fertility, and the increase of grain which would follow would greatly facilitate the rearing of mules, hogs, cattle, and sheep; and in a short time the whole State could render itself independent of the exactions of our Kentucky neighbours, who kindly supply us with all such things, simply at the expense of the prosperity of our agricultural population; for, in practice, they annually sweep the country of all the surplus cash which is afloat in payment for their bacon and mules. We would, if this system were adopted, soon be able to produce as much cotton on fifty acres as we do now on one hundred; and the investment of the agricultural profits of the State at home, although they might be small, would have a wonderful influence on general prosperity, and build facilities throughout our now desolate and almost unapproachable State, which would not only enchain our own sons to her borders, but induce capitalists to come into our midst, to make their dollars tell by learning us a lesson of practical enterprise. We say to the planters, raise less cotton, more grain, more mules, more hogs; make your own negro clothes; raise sheep—make your own blankets; erect tan-yards—encourage shoemakers and hatters; in fact, artisans of all kinds to settle permanently amongst you; labour at making your soil rich, and do not devote all your energies to wearing it out, and soon all things will go well with you. You will not make so many bales of cotton; in fact, may not cut such a swell on your factors' books; but, take our word for it, you will have happier slaves, richer lands, more thrift and fewer debts, and sleepless thoughts, to harass your hours of rest."

It is impossible to read this without being struck with the fact, that, while, from the exhaustion of her original poor soils, and her inability to clear and drain rich ones, that State is unable to produce cotton in competition with her neighbours, she is a large importer of other agricultural produce. Her chief city is supplied with hay from the North, notwithstanding her abundance of rich meadow land. She consumes the pork of Ohio, and she uses the mules of Kentucky; and thus, while selling her products at the low price that is necessarily consequent upon her distance from the place at which her food and cotton are to be converted into cloth, she buys of others food, mules, &c., at the highest price, because of her distance from the place of production. She wastes labour and manure upon the road, and is then surprised at the exhaustion that results necessarily from such a course of policy.

The remedy for all this may, it is supposed, be found, first, in diminishing the quantity of cotton; but that is already diminishing so rapidly that the great cause of apprehension throughout the State seems to be that its cultivation must soon cease, because of inability to produce it. She desires to diminish the supply of cotton, while her people are flying from her to seek the west, there *to produce more cotton*. Second, the lands are to be manured, but we are not told from whence the manure is to come. The State has scarcely any consumers of agricultural produce except those who are engaged in its production, and their consumption yields but little manure. Her horses are always on the road, wasting the manure yielded by her hay and her corn, and her rice and cotton are consumed abroad, the consequence of

which is, that of what is yielded by the land nothing goes back, and the land and its owner become impoverished together. Her population diminishes. Everybody is seeking to find elsewhere a better place for employing his capital and his labour. Under such circumstances it is useless to talk about artificial manures, and her swamps and river bottoms, in which manure has for ages accumulated, will not pay the cost of clearing for the raising of three or four hundred pounds of cotton to the acre. Give her a consuming population that will make a market on the ground for the tons of potatoes, and turnips, and hay, and the milk, and the veal, that will be yielded by rich soils, and the State will become one of the richest of the Union. It is population that makes food come from the rich soils, as we see to be the case in Belgium, and England, and New England; and it is depopulation that drives men back to the poorer ones, as is shown in Ireland, India, South Carolina, and Virginia. The people of Ireland are flying from each other as if from pestilence, and yet that unfortunate island, in which men are restricted almost entirely to the cultivation of the land, offers us now the chief European market for our surplus food, while South Carolina, destitute of consumers, is one of the principal markets of populous Ohio for her surplus products. Whenever the former shall begin to consume on the land the products of the land, she will have manure to keep in cultivation her poor soils, and she will acquire ability to clear and drain the rich ones, and then she may export hay instead of importing it. Ireland, like South Carolina, abounds in rich soils untouched. She has millions of acres of bog that could be drained with far less labour, and at far less cost, than have been required for similar lands in England, and it is estimated that three millions of these acres would afford food for six millions of people; but, also, like South Carolina, she is compelled to waste on the road the labour and manure yielded by the poorer soils now in cultivation, and is thereby rendered too poor to clear and drain the rich ones, which never have paid, and never can pay, the cost of preparation, without the presence of a consuming population requiring the potatoes, and the turnips, and the hay, of which the earth yields by tons, and not by pounds or bushels.

Had the people of the Southern States, during the last twenty years, been making for themselves, out of their own coal, ore, and limestone, an average of only 250,000 tons of iron, the quantity made in that time would have been five millions of tons, all of which would now be there in the various forms of agricultural and manufacturing machinery, railroads, cars, and locomotives, and they would now be adding to the quantity at the rate of half a million of tons annually.

Fifty thousand tons of iron would make almost 500 miles of single track road. Let us suppose that they averaged annually but half that quantity, and had now, as they might easily have, 5000 miles of road running through populous manufacturing villages in which they were converting their cotton into cloth or yarn for the supply of the world, and then let us estimate what would be the increased value of the landed property of those States. An average annual product exceeding that of the present time to the extent of only *one dollar per acre* of the States south of Mason and Dixon's line, would represent a capital of *six thousand millions of dollars*, being perhaps five times the present value of their slave population, all of which would be at this moment on the highway towards freedom as their masters were making their way towards fortune.*

Instead of pursuing a course that would have enabled them to profit by the

* Emigration from the rich lands of the older States of the South would then cease, and immigration would begin, and thenceforth the increase in the value of land would be immense.

magnificence of their position, the planters have allowed themselves to be taxed for the maintenance of the people of England, who produce little themselves, and have therefore but very little to give in exchange for the vast mass of agricultural products they receive, the consequence of which is, that their customers are becoming poorer every day, and they themselves are fast passing towards a state of exhaustion similar to that they have produced in Ireland, India, the West Indies, and every other country that has been compelled to submit to their most unnatural system. A writer, describing the present position of affairs, says:—

"As a disinterested spectator of events, I assure you that during a residence of nearly ten years in England, I have not seen the different branches of trade in so disastrous a position as they are at present; and from the petty dealer to the wholesale tradesman, I have never heard so many complaints about the wretched state of trade, not only in the metropolis, but generally throughout the country. I place more confidence in the statements of a dozen respectable tradesmen than I do in 'trade circulars,' which are usually got up to serve certain interests, or to cover the real truth, and incite speculation. If I were to give an impartial opinion, I should unhesitatingly say that the repeal of the corn-laws, the repeal of the navigation laws and the railway mania, have together produced the present panic—for it is useless to say that there is not a panic; the leading men of nearly every class declare it by their looks, their words, and their actions.

"The parish of St. Clement's Danes, one of the richest parishes of the metropolis, where I am now residing, shows the real condition of the general trades-people of London. The Church-warden of this parish recently informed me that *three* applications had been made to the parishioners for the amount of their poor rates and other taxes, and not more than one in twenty had paid their bills, and he intended to issue summonses against the delinquents. He also remarked, that during a residence of eighteen years in this parish, he had never known trade to be so dull as it is now."

What prospect there is of improvement may be gathered from the following extract from a journal that is the highest free-trade authority in England:—

"We may not unreasonably fear, therefore, that, so far as Ireland is concerned, a considerable source of the progressive increase of the population and wealth of the empire is much diminished, if not absolutely dried up. Other sources of increase have, at the same time, been opened to us; but whether these will balance, or more than balance, the loss occasioned by the condition of Ireland is more than we can say. For many years the condition of the population there was gradually deteriorating, while their numbers increased; that terrible process has at length reached its climax, and the present generation has to sustain the deteriorated, and we fear demoralized mass, without any immediate hope of their being restored to habits of productive industry. It seems right to put all classes at once on their guard, lest the decrease of population noticed in the last quarter, may, from the causes we have mentioned, be an index to a permanently slower increase in population than has hitherto taken place."—*Economist* (*London.*)

With such a state of things the consumption of our products cannot increase. The question to be answered is, "Can it even be maintained?" Whenever population diminishes in its ratio of growth, it is an evidence of a deterioration of condition, and when that is going on, the first effect is felt in the diminished demand for clothing, for food is the want that must be first supplied.

Let it but be known that the people of this country, North, South, East, and West, are *determined* that the seat of the cotton and iron manufactures of the world is to be here, and the transfer of men and machinery will be such as to exceed all present calculation, and every man that comes will consume three, four, five, six, or twelve times as much cotton as at present, while taking all his food from our own farmers, who then will consume three pounds where now they consume but one. The remedy for all the grievances of the planters is in their own hands, and it lies in the pursuance of a policy advocated by the fathers of the Revolution, and by every chief magistrate of

the Union, from Washington to Jackson, and of all of them but two were from south of Mason and Dixon's line, and all but those two elected by the same party that now repudiates protection.

Of all the chapters in the history of the people of this Union, the most honourable to them, as I believe, is that in which is recorded the history of the negro race. The three hundred thousand barbarians imported into this country are now represented by almost four millions of people, far advanced towards civilization and freedom, and to that number they have grown because they have been well fed, well clothed, well sheltered, and reasonably worked. It is a case totally without a parallel in the world, the history of which may be challenged for the production of a body of men invested with so much power over their fellow-men as has been exercised by the people of the South, and using it so moderately as to permit so rapid an advance in numbers and so great an improvement of condition.

Nevertheless, they are unceasingly stigmatized as slave-drivers and negro-breeders, and by the nation which lives out of them, and which *of all the nations of Europe possessing colonies has most misused its power over the negro race*, because the only one which has established laws prohibiting the consumer and the producer from taking their places by each other. It was remarked many years since, by an intelligent English traveller,* that to the French islands men went to remain and to exercise trades, but to the English ones they went only to endeavour to make fortunes, and then return. So has it everywhere been, and what have been the results? In India, poverty the most extraordinary, and a succession of famines and pestilences without a parallel; in the West Indies, a waste of life equally unparalleled, requiring constant importations for the mere maintenance of their numbers. From 1817 to 1829, a period of twelve years, the slaves of Jamaica were reduced in numbers, *by death alone*, ten per cent.; whereas had they been here they would have increased thirty per cent. The number imported into that one island could not have been less than double that imported into this Union, and yet, while the larger number is at this day represented by *three hundred thousand*, the smaller is represented by *almost four millions*. The slave chapter of British history is as disgraceful as that of the Union is honourable.

That slavery even yet exists among us, is due to the monopoly system which has destroyed the value of land in Ireland, India, the West Indies, and all other of the British colonies, and yet the nation by which that system was instituted heads the crusade against slavery, while converting the freemen of Ireland and India into slaves, and denouncing the planters, at whose expense she lives, as unworthy to be received into the society of free-born Englishmen; and those very planters are united in the support of the system by which they are impoverished, and the people by whom they are thus denounced!

The following article on the position and prospects of the cotton trade, received at the moment that the above was in the press, so fully confirms the views given in a previous chapter, that I am induced, long as it is, to reprint it at full length. It is from the London *Economist*,† the highest free-trade authority in Europe:

"The quarters whence Great Britain draws her supply of raw cotton may be classed under five divisions:—North America, Brazil, Egypt, India, and Miscellaneous Countries, chiefly our own colonies. On the increase of production in these lands, and on the proportion of that increase which is sent to this country, depends our capability of extending our cotton manufacture, or even of maintaining it at its present level. Let us therefore consider each of these sources of supply in turn, that we may be able to form a fair esti-

* Coleridge. Six Months in the West Indies. † Dec. 1, 1849.

mate of our expectations from each. North America, as the most important, we will leave to the last.

BRAZIL is the chief source whence we draw our supply of long-stapled cottons. Brazil has sent us as follows:

Brazil Cotton.

	Bales imported in five years.	Bales imported per annum.
1830—1834, inclusive	744,884	148,977
1835—1839 —	643,438	128,687
1840—1844 —	471,226	94,245
1845—1849 —	495,685	99,137

In this and the succeeding tables the imports for 1849 have been found by adding to the *known* imports for the first ten months, the quantity we have yet reason to expect, or that which ordinarily arrives in November and December.

From Brazil, therefore, our annual supply has diminished nearly 50,000 bales; or if we compare the two extreme years of the series, 1830 and 1848, the falling off is from 192,267 bales to 100,244, or 92,000 bales.

EGYPT.—Our Egyptian supply, which is also long-stapled cotton, has ranged as follows:—

Egyptian Cotton.

	Bales imported in five years.	Bales imported per annum.
1830—1834, inclusive	99,899	19,899
1835—1839 —	173,031	34,606
1840—1844 —	207,913	41,583
1845—1849 —	224,579	44,918

The supply from Egypt, however, seems to have reached its maximum in 1845, in which year we received 81,344 bales. This year it does not reach half that amount. Moreover, this country, from the peculiar circumstances of its government, is little to be relied upon,—the supply having varied from 40,290 bales in 1832 to 2,569 bales in 1833; and again from 18,245 bales in 1842, to 66,000 bales in 1844.

From OTHER QUARTERS, chiefly the West Indies, the supply has been:—

Miscellaneous.

	Bales imported in five years.	Bales imported per annum.
1830—1834, inclusive	68,873	13,775
1835—1839 —	161,369	32,274
1840—1844 —	117,887	23,577
1835—1849 —	44,833	8,966

EAST INDIES.—Our supply from this quarter varies enormously, from 90,000 to 270,000 bales per annum, inasmuch as we only receive that proportion of the crop which our prices may divert from China or from internal consumption. Our imports thence have been as follows.

East India Cotton.

	Bales imported in five years.	Bales imported per annum.
1830—1834, inclusive	403,976	80,795
1835—1839 —	723,263	144,653
1840—1844 —	1,167,294	233,459
1845—1849 —	899,213	179,852

The summary of our supply from all these quarters combined is:—

Summary.

	Imports in five years.	Imports per annum.
1830—1834, inclusive	1,317,632	263,526
1835—1839 —	1,701,101	340,220
1840—1844 —	1,964,320	392,864
1845—1849 —	1,664,310	332,862

The result of this inquiry, then is, that our average annual supply from all quarters, *except the United States*, was in five years ending 1849 *less* by 7,358 bales than in the five years ending 1839, and *less* by 60,000 bales than in the five years ending 1844. Of this *diminished* supply, moreover, we have been exporting an *increasing* quantity, *viz*:—396,000 bales in the last five years, against 342,000 bales the previous five years.

UNITED STATES.—We may now turn our attention to our last and main source of supply, America, which has sent us:—

American Cotton.

	Imports in five years.	Imports per annum.
1830—1834, inclusive	3,241,958	648,391
1835—1839 —	4,308,610	861,722
1840—1844 —	5,802,829	1,160,566
1845—1849 —	6,188,144	1,237,619

The last five years, it should be observed, include the three largest crops ever known, one very deficient, and one rather so.

It is a known and admitted fact among those conversant with these matters, that a price of 4*d.* a lb. for middling uplands, laid down in Liverpool, leaves sufficient profit to the American planter to induce him to grow as much cotton as his negroes can gather; and that, therefore, as the average price has scarcely ever ranged so low as this for any great number of weeks, the *possible* increase of the crop of cotton will keep pace with the *actual* increase of the Negro population; and cannot do more. Now the negroes increase at a very regular rate of 3 per cent. per annum. If, therefore, these premises be correct, it will follow that the cotton crop of each year will surpass that of each preceding year of *equally favourable conditions* (*i. e.*, as to good planting and picking weather, late frosts, freedom from worms, inundations, &c.) by 3 per cent. Accordingly, we find this to have been pretty closely the case, as the following tables will show. The years 1840, 1843, and 1845, were very favourable years for the growth and gathering of cotton. Let us see what crop each of these years, calculated on the above bases (3 per cent. yearly increase,) would give for 1849, also a favourable year:—

	Actual crop.	No. of years.	Per cent.	Estimated crop of 1849.
1840	2,178,000	9	27	2,866,000
1843	2,379,000	6	18	2,807,220
1845	2,394,000	4	12	2,681,280
Average				2,784,833
Actual crop				2,730,000

From the following table it will be seen that, assuming the year 1838 as a starting point, the average increase of the American crop for the last 12 years has not quite reached 3 per cent.: and in fact wherein for any short series of years this rate has been exceeded, it has been attributable simply to an unusual run of favourable seasons.

Year.	What the crop would have been with no extraordinary casualties, and increasing at the rate of 3 per cent. yearly.	Actual crop.	
1837—38	—	1,801,500	
1838—39	1,855,500	1,360,500	
1839—40	1,911,200	2,178,000	
1840—41	1,968,500	1,635,000	
1841—42	2,027,500	1,683,500	
1842—43	2,088,300	2,379,000	
1843—44	2,151,000	2,030,500	
1844—45	2,215,000	2,394,500	
1845—46	2,282,000	2,100,500	
1846—47	2,350,500	1,778,500	
1847—48	2,421,000	2,347,500	
1848—49	2,493,000	2,728,500	
1849—50	2,568,300	2,350,000	estimated
Average	2,194,400	2,080,500	

It is clear, then, that we shall be sufficiently near the mark for any practical conclusions, if we assume the average increase of the American cotton crop at 3 per cent. per annum, barring any *unusual* freedom from, or occurrence of, disasters, such as sometimes happen. Let us now inquire what proportion of this increase will fall to our share.

The consumption of the United States itself has been steadily on the advance, and now increases at an average annual rate of about 35,000 bales. It is now about 520,000 bales yearly. That of the continent now reaches (of American cotton) about 700,000 bales. America and the continent, therefore, require about 1,200,000 bales at present, and will require more each year. Moreover, they will always take precedence of Great

Britain, as their margin of profit is larger, and a small increase of price is of less consequence to their manufacturers than to ours, and checks consumption less. The following table will throw much light on this question:

5 Years.	Crop of American cotton.	Import of American cotton into Great Britain.	Export of American cotton from Great Britain.	American cotton retained for home consumption.
1840—44	9,905,638	5,802,829	295,600	5,507,229
1845—49	11,349,921	6,188,144	596,640	5,591,504
Increase	1,444,283	385,315	301,040	84,275

From this table it appears, that, while the *growth* of American cotton in the last five years exceeded that of the previous five by the unprecedented quantity of nearly one million and a half of bales, of this increase only 385,000 reached this country, *and of this we had to re-export more than three-fourths*, leaving an annual increase *available for home consumption* of only 17,000 bales. For any augmentation of consumption beyond this, we have been drawing on our stocks.

We will now bring into one view the *whole* supply and the *whole* consumption *of all kinds of cotton* in Great Britain during the last ten years:

Years.	Bales imported from all quarters.	Bales exported.	Retained for home consumption.	Supply for home consumpt'n annually.	Actual consumption annually.	Actual consumpt'n weekly.
1840—44	7,767,149	637,650	7,129,499	1,425,900	1,290,480	24,810
1845—49	7,852,454	992,850	6,859,604	1,371,920	1,477,360	28,410
Increase	85,305	355,200	. .	. .	186,880	3,600
Decrease	. .	. .	269,895	53,980		

We have taken the actual consumption of 1849 at 1,650,000 bales only, for reasons hereafter stated.

Now, *bearing in mind that the figures in the above tables are, with scarcely an exception, ascertained facts, and not estimates*, let us sum the conclusions to which they have conducted us; conclusions sufficient, if not to alarm us, yet certainly to create much uneasiness, and to suggest great caution on the part of all concerned, directly or indirectly, in the great manufacture of England.

1. That our supply of cotton from miscellaneous quarters (*excluding* the United States) has for many years been decidedly, though irregularly, *decreasing*.

2. That our supply of cotton *from all quarters*, (including the United States,) available for home consumption, has of late years been falling off at the rate of 1,000 bales a week, while our consumption has been increasing during the same period at the rate of 3,600 bales a week.

3. That the United States is the only country where the growth of cotton is on the increase; and that there even the increase does not on an average exceed 3 per cent., or 80,000 bales annually, which is barely sufficient to supply the increasing demand for its own consumption, and for the continent of Europe.

4. That no stimulus of price can materially augment this annual increase, as the planters always grow as much cotton as the negro population can pick.

5. That, consequently, if the cotton manufacture of Great Britain is to increase at all, *on its present footing*, it can only be enabled to do so by applying a great stimulus to the growth of cotton in *other* countries adapted for the culture.

Within the memory of many now living, a great change has taken place in the countries from which our main bulk of cotton is procured. In the infancy of the manufacture, our chief supply came from the Mediterranean, especially from Smyrna and Malta. Neither of the places now sends us more than a few chance bags occasionally. In the last century, the West Indies were our principal source; in the year 1786, out of 20,000,000 lbs. imported, 5,000,000 came from Smyrna, and the rest from the West Indies; in 1848, the West Indies sent us only about 1,300 bales; in 1781, Brazil began to send us cotton, and the supply thence continued to increase, though irregularly, till 1830, since which time it has fallen off to one-half. About 1822, Egyptian cotton began to come in considerable quantities, its cultivation having been introduced into that country two years before. The import exceeded 80,000 bales in 1845; the average of the last three years has not been a third of that quantity. Cotton has always been grown largely in Hindostan; but it did not send much to England till about thirty years ago. In the five years ending 1824, the yearly average import was 33,500 bales; in 1841, it reached 274,000, and may now be roughly estimated at 200,000 bales a year.

Now, what is the reason why these countries, after having at one time produced so largely and so well, should have ceased or curtailed their growth within recent years? It is clearly a question of price. Let us consider a few of the cases:

At the close of the years	Lowest price of Pernambuco.	Fall per. ct.	Lowest price of Maranham.	Fall per ct.	Lowest price of Egyptian.	Fall per ct.	Lowest price of Surat.	Fall per cent.
1836—39 inclusive	9½*d.*	—	8¼*d.*	—	10¼*d.*	—	4⅝*d.*	—
1840—43 . .	7	—	5⅝	—	7	—	3½	—
1844—48 . .	5⅞	36	4⅞	42	5⅞	43	2¾	40

Here, surely, may be read the explanation of the deplorable falling off in our miscellaneous supply. From the four years ending 1839, when the great stimulus was given which procured us so ample a supply during the succeeding period, to the quinquennial period ending 1848, there has been a fall in price, on an average, of 40 per cent. Unless, therefore, we assume either an enormous margin of profit in the earlier period, or an extreme diminution in the cost of producing the article of late years, such a fall in price would be quite sufficient to direct capital and industry into other channels, and to prevent so bulky an article as cotton from being grown or forwarded.

In both Brazil and India, freight and carriage form an inordinate proportion of the price of cotton. In both countries the bales are carried great distances on the backs of mules or other beasts of burden. The deficiency of good roads, convenient vehicles, and safely navigable rivers, in the cotton districts of both countries, swells the expense of bringing the bales to the shipping ports to such an extent, that, when prices are low in England, the ultimate net remittance to the planter is quite insufficient to repay the cost of growing, picking, and packing. In some years, the price of much of the Surat cotton sent to this country was so low as only to remit *one penny* a pound to the shipper at Bombay; and by the time this reached the actual grower, it had probably dwindled away, through the expenses of carriage, to a sum inadequate even to pay the government rent. Our supply from both these countries will depend entirely upon price. In Brazil, where we believe the sugar cultivation is less profitable than formerly, a range of prices 50 per cent. higher than those of the last few years would probably induce the planters to increase their cotton grounds, and would repay them for so doing. In regard to the East Indies, where large quantities are always grown, our supply thence depends upon two things—first, the demand for China, which is usually supplied before Great Britain; and, secondly, on the question whether the net price at Bombay or Madras will pay for picking, cleaning, packing, and transporting to the coast. Under the stimulus of high prices, (such as prevail at this moment,) large quantities, would, we doubt not, be sent forward; and the price that will be requisite to secure such large supplies will diminish as the means of carriage are increased and cheapened. If the prices of the last five years continue, we believe there can be no doubt that the supply will inevitably continue to fall off.

We do not, however, participate in the sanguine expectations which many parties entertain, that even with higher prices the quantity and quality of East Indian cotton sent to this country can progress so rapidly as to render us at all independent of the American supply. For, in the first place, the absence of good roads or navigable rivers in the cotton districts, the length of time and expenditure of capital needed before the want of those can be supplied by the establishment of railroads, and the languid and unenterprising character of the people, must necessarily cause any material increase of supply (at least over 250,000 bales per annum) to be a matter of very slow and costly operation. And, in the second place, the *quality* of the cotton grown in India is peculiar; and this peculiarity is still traceable, though in a modified degree, in whatever locality and from whatever seed the plant is grown, even in the best specimens (improved as they unquestionably are) which have of late been sent to this country; and this peculiarity will always, we fear, prevent it from being substitutable for American cotton, except to a very limited extent.

Our hopes lie in a very different direction; we look to our West Indian, African, and Australian colonies, as the quarters from which, would government only afford every *possible* facility, (we ask and wish for no more,) we might, ere long, draw such a supply of cotton as would, to say the least, make the fluctuations of the American crop, and the varying proportion of it which falls to our share, of far less consequence to our prosperity than they now are.

The West Indies, as we have already seen, used to send us, sixty years ago, about 40,000 bales, or three-fourths of our then supply. But the enormous profits realized on

the growth of sugar, partly caused, and much prolonged, by our prohibitory duties on all competing sugars, directed the attention of the colonists exclusively in that direction. As in the analogous case of protected wheat in this country, other cultivation was gradually abandoned in favour of a single article; the cane was grown in soils and localities utterly unfit for it, and into which nothing but the protective system could have forced it, and cotton was soon altogether neglected. Many parts of the West Indies, St. Vincent especially, which are worst adapted for the cane, are the best adapted for the cotton plant, which flourishes in light and dry soils, and especially near the sea-coast. The artificial stimulus which our mistaken policy so long applied to sugar cultivation, having been withdrawn, it must be abandoned in all unsuitable localities, and would be well replaced by cotton. What price would be required to repay its culture there, we cannot say; but considering at how small a cost it might be placed on ship-board in all these colonies, and how large a portion this item generally forms of the whole expense of production, we cannot see why cotton should not be grown in the Antilles as cheaply as in the United States, if only the negroes can be relied upon for steady and continuous labour during the picking season. Now, the price of West Indian cotton ranges higher than that of the bulk of the American crop, as being longer in staple. Our belief is, that were the attention of our planters once energetically directed to this article, they might soon send us a regular supply of 100,000 bales per annum, and thus find a use for many estates that must otherwise be abandoned.

The experiment of cotton growing has already been tried with success in one of our most hopeful African colonies—Port Natal. We have already received above 100 bales from this colony—the main portion of which consists of the indigenous cotton, very similar to that shipped from New Orleans, clean, fine, tenacious, but of a light brown colour. On the whole, it is a most admirable article for ordinary purposes, and worth in the market to-day nearly 7*d.* per pound. The remainder of the shipments have been grown from the sea-island seed, and are of excellent quality. The cultivation is rapidly increasing, and about 500 bales are expected next year from the colony. A society has been formed for promoting emigration thither, and a ship full of emigrants sailed a few days since. Mr. Byrne, the agent, says:

"Natal is situated in a sunny and bright region. It has iron, lead, coal, and copper in abundance, and with British industry might be made one of the finest and wealthiest countries on the globe. The country is admirably calculated for the growth of cotton, some of which is of a superior description. In America, cotton was chiefly cultivated by slave-labour at a cost of about 35*l.* a year for each slave; whereas at Natal the labour of the Zooloos could be purchased at a cost of 10*s.* a month; and Natal too, from its proximity to the sea, was most advantageously situated for carrying on the trade with England in competition with the States. I would not advise you to cultivate sugar; you will be able to get that article perhaps better from the Mauritius, where you will find a highly remunerative market for all agricultural produce. I intend in the beginning of the year to send out a screw steamer to run to and from that island and Natal."

From Australia we have as yet had no bulk of supply, but several acres are under cultivation, and the samples sent are of so fine a quality as to prove beyond question the adaptation of the soil and climate for the production of as good an article as any grown in America. We have now lying before us, along with the Port Natal cotton, samples of some grown from sea-island seed at Bolwarra, in New South Wales, near Maitland, about 80 miles north of Sydney. It is long, fine, and silky.

We believe that, under due encouragement, the cultivation of cotton in these quarters might increase in a steady ratio equal to our increasing demand. Let us now see, on a summary, how the matter stands.

We have seen that of the American cotton crop, our annual supply during the last five years has nearly reached 1,120,000 bales, and that, *the yearly increase of the crop being balanced by the yearly increasing demand for the United States and for the continent*, there is little probability of our ever getting more than this *on an average*. Let us suppose that a due advance in price raises the production of Brazil to what it had attained in 1830, and that of India nearly to what it was in 1841, and that Egypt and our own colonies will again send us some appreciable and increasing imports:

	Bales per annum.
United States . . . . . say	1,200,000
Brazil	200,000
India	250,000
Egypt	50,000
Our colonies	50,000
	1,750,000

This would allow us a supply of 33,500 bales a week, the apparent consumption of this year. For any addition to this we must depend on the increase of the colonial supply, or on that which a still higher range of prices will enable us to wring out of India and Brazil. The conclusion from the whole clearly is, that, in order to secure such a supply of the raw material as is needed to meet our own present consumption, *we must be prepared to pay a decidedly higher range of prices than has of late years obtained;* that, in fact, the average prices of the last five years have proved quite inadequate, in spite of large crops in America, to draw to this country sufficient cotton to enable our actual machinery to work full time. Higher prices, therefore, *must* obtain in future; nor should spinners and manufacturers wish it otherwise; for experience has fully shown them that no circumstances can cause them so great or so certain a loss as an inadequate supply of the raw material, and higher prices can alone avert this supreme evil.

So much as to the probable sufficiency of the supply of the raw material to this country, *on the supposition that the consumption is what it appears to be, and will continue what it is.* But are we justified in these two assumptions? Let us put together a few facts which bear upon the question.

And, first, let us ascertain what the actual consumption has been during the last ten years. We know this with accuracy for nine years, and for the first ten months of this year. During these ten months, the deliveries to the trade have reached 1,495,000 bales. But we know that, during the latter portion of this period, manufacturers have been purchasing far more than they need for actual use, and that, while the actual quantity worked up has, in consequence of a general tendency towards the production of finer fabrics, been *decreasing* since the beginning of June, the purchases of cotton have been *increasing*, till, in October, they reached the unprecedented amount of 217,000 bales. A lull has now taken place, and we believe we shall not be far wrong in assuming that the purchases of the trade, during the last nine weeks of this year, will not exceed 205,000 bales; and that, in that case, they will hold at the end of the year 50,000 bales more than usual in stock. This would give the consumption of the year at 1,650,000 bales. Our own impression is, that this estimate is rather over than under the mark, and that spinners hold a larger stock than we assume; but, in any case we cannot be sufficiently wide of the truth to affect our conclusions.

Year.	Weekly consumption of cotton in Great Britain.	Year.	Weekly consumption of cotton in Great Britain.
1840	24,868	1845	30,120
1841	22,134	1846	30,000
1842	22,949	1847	21,270
1843	26,693	1848	28,950
1844	27,439	1849	31,730

Now, we wish our readers to consider this table carefully, and notice the extraordinary *fluctuations* in the quantity of cotton worked up each year, in connection with the facts we are about to state. The weekly average fell nearly 3,000 bales from 1840 to 1841; then jumped up nearly 4,000 bales from 1842 to 1843; in 1845 and 1846, it remained stationary at a high figure; and (passing over for obvious reasons the anomalous year of 1847) it had again fallen in 1848, when the quantity only exceeded that of *eight* years previously by 4,000 bales. *Yet, during the whole of this period, the machinery engaged in the cotton manufacture was constantly*, though not regularly, *increasing;* and, except for a short period in 1842, (and in 1847, which last year we have thrown out of our calculation,) the mills were, we believe we are correct in stating, all at full work. Indeed, "short time" is attended with too tremendous a loss to the mill-owner ever to be resorted to, except under the direst pressure. During the last year, we see the consumption has increased nearly 3,000 bales a week, though the hours of labour have been reduced, by legislative enactment, from eleven to ten per diem.

All these considerations point clearly to the conclusion, that *our consumption of the raw material is not a fixed, but a varying quantity*, and is affected by some other causes than either the amount of machinery in operation, or the hours during which it is employed. What this cause is, and the extent to which it is capable of operating, we can be at no loss to discover.

The weight of raw cotton consumed by a given amount of machinery varies according to the nature of the article produced. We produce in England fabrics of which the raw material forms *two-thirds* of the value, and fabrics of which it forms not *one-fiftieth* of the value. We spin yarns of which the raw materials cost *three-fourths*, and yarns of which it costs *one-twentieth*, of the finished price. We have spindles that produce two pounds of yarn a week, and spindles that do not produce two pounds a quarter. But, without

going to these extreme varieties, we will here copy a statement made by Messrs. Du Fay & Company in their monthly circular, the accuracy of which we can fully confirm. They say:

840	spindles,	working	20's	twist,	will	consume	1,340	lbs. of cotton
840	"	"	30's	"	"	"	840	"
840	"	"	40's	"	"	"	525	"
840	"	"	60's	"	"	"	224	"

Now, though machinery accustomed to produce No. 20's cannot produce No. 60's, yet it can, without material change or difficulty, produce No. 30's; and machinery adapted for No. 30's can change to No. 40's, and so on. In fact, every mill has a range of *at least ten numbers*, by varying which it can reduce or augment its consumption of cotton *easily* from 25 to 50 per cent. The same may be said of weaving mills. In many mills, looms may be seen working side by side of the same construction, some of which produce 60 lbs. a week, and others only 25 lbs. We could mention at least one mill where the amount of raw cotton worked up weekly varies, according to the fineness of the article produced, to meet the fluctuating demands of the market, from 30,000 lbs. to 18,000 lbs.; and we find in the *Manchester Guardian* of last Saturday the following corroborative statement:

"Some idea of what a change of numbers will effect may be gathered from the following instances; the names of the firms are before us:

	Reduction.		Previous weekly. consumption.
No. 1	10,000 lbs.	out of	40,000 lbs.
No. 2	18,000 lbs.	—	60,000 lbs.
No. 3	25,000 lbs.	—	115,000 lbs.
No. 4	10,000 lbs.	—	30,000 lbs.
No. 5	10,000 lbs.	—	30,000 lbs.
No. 6	70 bls.	—	120 bales.

We have been informed by another very extensive spinner, that the reduction in his establishment is more than 40,000 lbs. per week."

It is not easy to ascertain the extent to which this change from coarser to finer numbers is actually carried at any particular period. We know, however, that it does go on to a very great extent, and has done so, perhaps almost unprecedentedly, during the last six months; and, when we consider the immense proportion of the *weight* of cotton used in England, which is consumed by the makers of heavy cloths and coarse yarns, we think we may safely affirm that a *brisk* demand for printers, shirtings, and India yarns on the one hand, with a *dull* demand for domestics, long-cloths, and German yarns on the other, or a reversal of these conditions of the market, if continued for any time, will make a difference of at least 25 per cent. in the weight of raw cotton consumed.

Now, an advance in the price of cotton is much more strongly felt in the coarser yarns and the heavier cloths than in the finer ones. An advance, such as has taken place in the last twelve months, of nearly 3*d.* per lb. on the raw material of a stout calico which ordinarily sells in the finished state, at 8*d.* per lb. is nearly 40 per cent. on the manufactured article. On a printing cloth, or a fine shirting, which sells at 12*d.* per lb. it is only 25 per cent.; and on the piece *when printed*, it is far less than this—in fact a mere trifle. Or, to put it in a still clearer light, an advance of 3*d.* per lb. on a heavy domestic calico, will compel the purchaser to pay 4*d.* where he formerly only paid 3*d. per yard.* The same 3*d.* per lb. will be 15*d.* on a piece of printing cloth 30 yards in length, which, when printed, sells in the shops at about 12*s.* 6*d.*; in other words, it will raise the price to the customer from 5*d.* to 5½*d. per yard.* Now, this advance, which is only ten per cent., is not sufficient materially or rapidly to check consumption; the other advance, which is 40 per cent., is. It is clear, therefore, that an advance in the price of the raw material will check the demand for, and consequently the production of, heavy fabrics, much sooner and more decidedly than that of light ones. Accordingly, as the following table will show, *the range of prices* is more limited in the former than in the latter; and never keeps pace with, or nearly so, that of the raw material:—

	Price per lb. of the following articles in November.					Extreme range.
	1845.	1846.	1847.	1848.	1849.	
	d.	*d.*	*d.*	*d.*	*d.*	*d.*
Raw cotton, fair uplands	4½	6	5⅛	4	6½	2½
No. 20's water twist, good seconds . .	9	8¼	7¾	6¼	8½	2¾
No. 40's mule twist, fair seconds . .	10	9¼	8¼	7	9½	3
Stout domestics, 18½ lbs. for 60 yds. . .	9¼	9¼	9¼	8	8¾	1¼
Medium domestics, 12 lbs. for 60 yds. .	11¾	11⅛	9¾	9¼	10	2½
Printing cloths, 27 in. 72 reed, 5 lbs. 2 oz. .	13	13¼	12¼	10¾	14¼	3½

It is obvious from this table that while printing cloths have a range of price even exceeding that of raw cotton, and find no difficulty, where there is a reasonably brisk

trade, in following its fluctuations, the very reverse is the case with heavy domestics, into which a very disproportionate bulk of the raw material is worked up, when compared with the machinery employed. For these last-mentioned articles there is a very extensive demand *at low prices;* but with any material advance, this demand immediately falls off. A great proportion of them is exported in the form of T cloths and long-cloths to Portugal, the Mediterranean, and the Levant, as long as prices range about 8*d.* a lb.—when it approaches 9*d.* this export is almost wholly suspended, and the manufacturers who ordinarily supply it, are compelled to turn their attention to other fabrics.

Another cause contributes to this change. In unprofitable years, such as always occur when the raw material is deficient in quantity and has rapidly become enhanced in value, (as in the present year,) every manufacturer is of course anxious both to minimize his loss, and to make his capital go as far, and last as long, as he can. It is evident that this will be best effected by turning his machinery to the finest range of numbers it is fitted to produce, and working up (say) 20,000 lbs. instead of 30,000 lbs. of cotton weekly. Moreover, in years when trade is dull, and when manufacturers, from inability to sell, are compelled to accumulate stocks, the same inducement to produce as fine fabrics as possible is still more strongly felt. A manufacturer with 500 looms on light printing cloths can afford to hold a stock of 50,000 pieces, or four months' production, but a manufacturer with 500 looms must have a much larger capital who can afford to hold 25,000 pieces, or four months' production of heavy domestics. In round numbers, the first would have 12,000*l.* and the second 18,000*l.* locked up.

From a combination of all the above considerations—from observing that this change from coarser to finer fabrics has often occurred in the past—from knowing how easily, and to what an extent, it may be effected—and from perceiving the vast inducement which such a rise in the value of cotton as has recently occurred offers to this change—we feel no doubt that such change has, during the last six months, been carried to a far greater extent than is generally estimated; and we question whether the actual consumption is at this moment within 5000 bales per week of what it appeared to be in May last, nor within 3000 of what it actually was. We feel convinced, too, that with our present and future prospects as to the supply and price of the raw material, as developed in the early part of this paper, our manufacture must run more than it has done of late years upon the finer yarns and fabrics, and consequently that our consumption of cotton (till the supply from miscellaneous quarters has been greatly augmented) must tend to *decrease* rather than otherwise, notwithstanding the increase and improvement of machinery; that (to sum up the whole) *those speculators who refuse to believe in a diminished consumption, and those manufacturers who refuse to face the fact of an inadequate supply, will find themselves equally in error, and in danger.* We particularly call the attention of the latter parties to the consideration that the better or worse accounts of the coming American crop in no degree affect our argument. We have assumed it at 2,350,000 bales—the highest estimate being 2,400,000 bales.

There are yet other reflections which tend to corroborate this conclusion. We are not without indications that we have over-estimated and outrun the demand for the manufactured article from our existing markets, as much as we have outrun the supply of the raw material from existing sources. It is probable that the world's requirement of cotton goods about keeps pace with the world's growth of cotton wool. But unfortunately our machinery has increased faster than either. We can produce more calico than is wanted, and we can consume more cotton than is grown. We think that, in endeavouring to ascertain this, we may safely take the data of the last five years as our basis, since, though the demand for our manufactures has in that period been checked by a tremendous political and commercial convulsion, yet on the other hand it has been increased during a portion of that time by an unexampled expenditure among the working classes, (in the form of wages to railway labourers and others,) and the supply has been checked by one of the most deficient cotton crops known for many years.

We have constructed the following tables with the greatest care, and from the best information we can obtain. We believe they will be found essentially correct:—

No. 20's Water twist.

	Price of cotton per lb.	Cost of workmanship and waste.	Total cost.	Selling price.	Profit.	Loss.
	d.	*d.*	*d.*	*d.*	*d.*	*d.*
1845	4·25	3	7·25	9	1·75	—
1846	6	3·25	9·25	8·25	—	1
1847	4·7	3·1	7·8	7·8	—	—
1848	3·6	3	6·6	6·25	—	0·35
1849	6·25	3·20	9·45	8·45	—	1

No. 40's Mule twist.

	Price of cotton.	Cost of workmanship and waste.	Total cost.	Selling price.	Profit.	Loss.
	d.	*d.*	*d.*	*d.*	*d.*	*d.*
1845	4·5	4	8·5	10	1·5	—
1846	6	4·2	10·2	9·25	—	0·95
1847	5	4·1	9·1	8·25	—	0·85
1848	4	4	8	7	—	1
1849	6·5	4·2	10·7	9·25	—	1·45

The prices here given are those of November in each year, both in this and the subsequent tables.

Stout Domestics.

	Price of cotton per lb.	Workmanship and waste.	Total cost.	Selling price.	Profit.	Loss.
	d.	*d.*	*d.*	*d.*	*d.*	*d.*
1845	3·75	4	7·75	9·25	1·5	—
1846	5·6	4·2	9·8	9·36	—	0·5
1847	4·25	4	8·25	9·25	1	—
1848	3·25	3·35	7·1	8	0·9	—
1849	5·7	4	9·8	8·75	—	1·05

Medium Domestics.

	Price of cotton per lb.	Workmanship and waste.	Total cost.	Selling price.	Profit.	Loss.
	d.	*d.*	*d.*	*d.*	*d.*	*d.*
1845	4·25	5·50	9·75	11·75	2	—
1846	6	5·75	11·75	11·25	—	0·5
1847	4·75	5·25	10	9·75	—	0·25
1848	3·65	5	8·65	9·25	0·6	—
1849	6·45	5·5	11·75	10	—	1·75

In estimating the second column in all these tables, we have taken into account both the economy, in the cost of workmanship, where there has been any, and also the variation in the waste owing to the varying price of cotton, which will account for the slight fluctuations observable.

Printing Cloths.

	Price of cotton.	Workmanship and waste.	Total cost.	Selling price.	Profit.	Loss.
	d.	*d.*	*d.*	*d.*	*d.*	*d.*
1845	5	6·85	11·85	13	1·15	—
1846	6·5	7	13·5	13·25	—	0·25
1847	5·5	6·75	12·25	12·25	—	—
1848	4·5	6·5	11	10·75	—	0·25
1849	6·25	6·75	13·5	14·25	0·75	—

It is important to observe that the experience of isolated *individuals* will not invalidate the conclusions of these tables, which show the margin between the raw material and the manufactured article *at the prices of the day*. These prices vary much during the year; and a manufacturer who has laid in his cotton at the cheapest time, and made his contracts of sale at the dearest, may realize a profit, though the general trade incurs a loss. The only case in which these tables may lead to an incorrect conclusion is, where the relative prices in *November* are not fair representatives of the average prices of the year. In the year 1847 this was the case, the margin between cotton and yarn, or cotton and cloth, being much *greater* in November than during the chief part of the year, and the *loss* consequently far *less*. The average of that year left a large loss on all articles.

From these tables it would appear—as indeed has been well known to all connected with the trade—that our cotton-spinners and manufacturers on an average, and with a few exceptions, have been carrying on their works to a loss, ever since 1845. This has occurred during a period in which the price of the raw material has fluctuated upwards and downwards at least 40 per cent. Now can it be supposed that they would have encountered the impossibility, which it is evident they *have* encountered, of obtaining remunerating prices, if they had not produced more than our actual markets can, on an average of years, take off?

At the beginning of this year, great expectations were entertained of our home demand. It was argued, and with good reason, that we never yet had a year of general employment and low prices of provisions combined, which was not also a year of very large domestic consumption of manufactured fabrics. This year labour has been in very brisk request, and food has never been so cheap and plentiful since 1836. Yet our expectations

from these facts have not been fully answered. The sellers of printing cloths and medium shirtings report that their home demand has, on the whole, been good; the sellers of domestics report, on the contrary, a decidedly dull business, worse than that of last year; but we believe all agree that the anticipations with which they began the year have by no means been realized. We suspect the cause to be this:—The depreciation in railway property, the effects of the Irish famine, and the commercial crash in 1847, have impoverished all classes of the community to a much greater extent than has been allowed for in the calculations of our tradesmen. We question whether "the power of purchase," on the part of the British community, is nearly equal to what it was in 1845. One fact alone may enable us to guess at the degree to which its aggregate means of expenditure must have been reduced. In round numbers, the sum *actually expended* in railways is 210 millions: their *actual value* at the prices of the day does not exceed 100 millions; and many of them pay little or no dividend.

Let us now sum up the conclusions which our tables have solved:—

1. Our supply of cotton has materially fallen off during the last few years, and will not increase except under the stimulus of much higher prices than have (till the last few months) obtained.

2. That under such ranges of prices our consumption will not maintain its present apparent rate, (or say 32,000 bales a week,) whatever be the increase or improvement of machinery.

3. That, except under the stimulus of low prices, our existing markets *cannot* take off as much as our machinery *can* produce.

4. That the practical deductions pointed to by these facts are two—*first*, a permanent tendency towards the production of finer fabrics; and *secondly*, a check to the increase of mills and machinery—of our producing power—that is, till the increased supply of the raw material on the one hand, and an increased consumption of the manufactured product on the other, shall once more have restored the balance."

It is here stated that the consumption of the last five years is greater by 3600 bales per week than in the previous five, but it is not shown whence this cotton came. The whole quantity retained for consumption in the second period is less by 269,000 bales than in the first, and yet the consumption is said to have been greater by 187,000 per annum, or a total quantity of 935,000 bales, which added to the deficiency in the quantity retained, would make 1,200,000 bales. The stock of American on hand at the close of 1849 was less by 400,000 bales, and that of other descriptions may have been reduced 250,000; but even this leaves 550,000 to be accounted for. It is scarcely possible to examine the figures given in this paper without arriving at the conclusion that the consumption is exaggerated.

Admitting, however, all that is claimed, I will now proceed to show how large a portion of this increase has resulted from the existence of *protection* elsewhere. It has been shown* that our import of cotton goods in two years, ending June 30, 1843, the period of *almost free trade*, was very small, the average having been but $7,184,000. If, now, to this we add the increased import of the year ending June, 1844, we obtain an average of about . . $9,000,000
From June, 1844, to June, 1849, the average was about . 16,000,000
During one-half of this period the tariff of 1842 was in existence, and during more than half of the balance, that of 1846 was almost altogether inoperative—and for the balance of the time the duty has been thirty per cent. Nevertheless, the amount *imported*† has been almost double, and the excess is not less than three-fourths of a pound per head, making an average of about 35,000 bales per annum.

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* Page 394, *ante*.

† By reference to the tables in Chapters II. and III. it will be seen that much of these imports in the last two years was obtained in exchange for certificates of debt, and therefore deducted from the amount of import as there given, the object in constructing those tables having been that of showing what was the *power of consumption* resulting from the *power of production*, not that which resulted from the impoverishing system of buying goods on credit.

The average import of yarn into the other protected country, the *Zoll-verein*, from 1837 to 1841, was 351,000 quintals. That of 1843 was 475,000, and the average from 1840 to 1844 was probably about 440,000. In 1845 it was 574,000. Taking that as the average from 1845 to 1849, as it appears to have been,* we have an excess of 134,000 cwts. of yarn, equal to 40,000 bales of raw cotton.

The two together make 75,000, which, being deducted from the excess consumption alleged to have taken place, leave 112,000, and the account will now stand thus . . . 1840–44 annual average 1,290,000
1845–49 " " 1,402,000

showing an increase of little more than *eight* per cent., while the low prices of the second period have been lower than those of the first by *twenty-five* per cent. It is obvious that the increase, trivial as it has been, *among the unprotected consumers*, has been obtained at the cost of the planter, and that the amount collected from the population of England and that of the world at large for his use, was greatly less in the second period than in the first. The consumption of American cotton in Great Britain, in the present year, is estimated at only about 1,100,000 bales, being little more than it was ten years since, when the average price was as high as at present. It is clear from this the market of England cannot be made to grow in such manner as to keep pace with our production. Why it cannot, and will not, may, I think, readily be shown by an examination of the operations of the past year, in which there has existed no railroad speculation, no famine, no potato-rot, and in which, on the contrary, every thing has tended to produce a perfect realization of the anticipations of the most sanguine friend of the existing system.

The total value of exports of the kingdom for the ten months ending November 5, 1849, was	£49,400,000
The total of grain, and flour and meal as grain, imported in the same period, was 10,300,000 quarters, which, at an average of 36*s.* per quarter, would amount to about £18,500,000, and with 43,000 tons of potatoes, to about	18,600,000
The number of oxen, bulls, cows, sheep, &c., 144,000, say	150,000
Of bacon, beef, pork, hams, butter, cheese, and lard, 1,500,000 cwts., which at 30*s.* would be	2,250,000
Grand total of commodities now imported, but with which the people of the United Kingdom supplied themselves almost entirely only a few years since .	£21,000,000
Deducting these, the amount of exports remains . .	28,400,000
The exports of cotton manufactures and yarn (£5,833,000) amounted to £22,550,000, and if we estimate the cotton required for their production at three-eighths of this amount, we obtain as its value	8,500,000
The wool imported to be manufactured and exported amount-	

* The export of yarn to the ports through which Germany is supplied, in four of those years was as follows:—

	1845.	1846.	1847.	1848.
Belgium, lbs. . .	3,917,000	5,359,000	3,520,000	3,168,000
Holland " . .	21,556,000	24,662,000	16,206,000	18,877,000
Hanse Towns, &c. .	40,315,000	45,041,000	36,123,000	32,910,000
Total lbs. .	64,788,000	75,062,000	55,849,000	54,955,000

ed to nearly 60,000,000 of pounds, which, at a shilling a pound, would be 3,000,000

The flax imported was 1,553,000 cwts., and the average price being 32*s.*, the amount is 2,500,000

If we now add for the hides, timber, copper ores, Swedish iron, block-tin, brimstone, indigo and other dye-stuffs, silk, sugar, gold, silver, quicksilver, and other foreign materials included in this vast amount of manufactures exported only . 2,500,000

We obtain as the total of foreign raw materials exported . £16,500,000

leaving as the value of the products of the labour and land of England exported in ten months £11,900,000

or per annum £14,280,000

being at the rate of 9/6 = $2·28 per head, to be applied to the purchase of cotton, sugar, coffee, tea, silks, dying materials, timber, and all other articles of necessity or of luxury required for domestic consumption, grain, potatoes, live animals, and cured provisions alone excepted.

If the reader will now compare this statement with those of other years before given,* he will, I think, have no difficulty in satisfying himself that "the power of purchase" of the people of Great Britain is in a state of rapid diminution, and that to that fact is due the distress existing among her people.

It will be said, however, that she *does* consume much more than this amount. She does, and how she is enabled to do it, I propose now to show. Thus far, however, the accounts of the various periods are made out precisely alike, and answer for the purpose of comparing the present with the past.

It will be seen that the prices of all the articles I have particularized would be low even here. Of the grain, nearly three-fourths are wheat or wheat flour, and the price is but 4*s.* or 88 cents per bushel, delivered in England. The bacon, beef, pork, lard, and butter are at 6¼ cents per pound, also delivered in England. The flax is at seven cents per pound. The wool is at a shilling, and the cotton supposed to be about 5½*d.* per pound. These are prices at which we should not desire to deliver the same commodities at New York or Philadelphia, on their way to Liverpool. Nevertheless, Great Britain obtains all these, and immense quantities of other commodities in addition, *and yet brings us largely in debt on the year's business.* She uses sugar valued at £5,000,000. Large quantities of cotton, silk, hemp, and hides, are consumed at home. Her consumption of tea is 40 millions of pounds. Of timber she consumes a million of loads, and the price of Canada red pine is £3 per load. How does she acquire the power to do all these things?

The cotton that comes from Bombay, as stated above, frequently yields to the shipper at that place but a penny per pound, which will not defray the cost of transportation from the place of production to the place of shipment, leaving nothing whatever for the cost of production, and yet the poor producer pays to the Company heavy taxes for the use of that land, which taxes are remitted to England for the payment of expenses, pensions, dividends, &c.

The sugar from the Mauritius sells for 22*s.* per cwt., or 2⅜*d.* per pound, a price that cannot yield the shipper much, if any thing, more than a penny per pound. The producer receives almost nothing. It was shown by the accounts of several large houses, owners of real estate in that island, that for years the estates received nothing whatever. So is it with Canada, and her lumber.

* See page 15.

The charges upon all commodities that pass into England are immense, and they cannot be otherwise. The producers are few, and the consumers are many, and the latter must be supported by the former. Wherever four families must eat and but one raises food, the share that falls to the former must be small, and therefore it is that the farmers and planters of the world are kept so poor.

With every step downward the operation of the system tends to become more severe. A penny taken out of a pound of cotton that sells for a shilling, is a trifle, but a penny out of 3*d.* falls heavily. When cotton is high, it sells rapidly and the charges are few. When the crop is large and it sells slowly, the charges are numerous. So is it with sugar, tobacco, rice, and all other of the products of the earth. With the diminishing power of consumption prices universally have diminished, while the necessity for advances, storage, &c., has increased, giving to the exchanger power to take for himself not only a larger *quantity*, but a larger *proportion* than before. Hence it is that Great Britain is enabled to consume so much while producing so little.

Diminish her power of taxing the planters and farmers of the world, and it will speedily be seen that the power of consumption that even now exists results from the ability to throw upon others the burden that she should bear alone. The *Economist*, a journal not to be suspected of exaggerating the evils of the present state of things, expresses its belief that "the power of purchase" on the part of the British community *is not nearly equal to what it was in* 1845.* That such is the case there can be no doubt, and that the

* This same journal *but a fortnight before* assured its readers that "ever since there had been a reduction of the duties of the sliding scale, and a probability that the corn laws would be abolished, the farmers have steadily improved their cultivation and produced more." If production has increased, how is it that the power of purchase has decreased? If the power of purchase has decreased, how are the people enabled to purchase all this *supposed* increased domestic product, and the enormous quantity that is imported? The power of consumption and that of production go hand in hand with each other, and if "the power of purchase" has diminished, as it unquestionably has, it is because the power of producing things *with which to purchase* has declined.

Much of the diminution in the "power of purchase" is ascribed to the railroad speculation, but it is difficult to see how that should have produced any such effect. Under it much property changed hands, but the actual expenditure was merely the cost of grading and laying the roads, and it cannot be doubted that the labour that has been saved by means of the use of the roads has been quite equal to the amount expended. The price paid for land, and the fees to parliamentary agents, &c., were merely transfers from the pocket of one man to that of another, and could not have impaired the "power of purchase." The railroad speculation produced the roads, and existing as they do, they tend to increase the power of production and consumption. It is necessary, therefore, to look elsewhere for the causes of the state of things now existing in England. They are to be found in the *necessity* for competing with the lowest priced and most worthless labour of the world. The results of that necessity are exhibited in the following facts, which will not only account for the present diminution in "the power of purchase," but relieve us from difficulty in accounting for future diminutions.

"It appears from a parliamentary return, that the holders of farms, who in 1845 were 310,000 over the Emerald Isle, have in 1848 sunk to 108,000. *Two hundred and two thousand cultivators of land* have disappeared in three years, and with them at least half of the capital by means of which the land was made to produce any thing."—*Blackwood's Magazine, December*, 1849. The bank-note circulation of Ireland, which in August, 1846, was £7,500,000, had fallen in August, 1849, to £3,833,000.—*Ibid.* The poor rate of Ireland, which in 1846 was £200,000, has risen to £1,900,000. That of Scotland has risen in three years from £185,000 to £560,000. In Glasgow, anterior to 1846, it was £30,000. In 1848–9, it was £200,000. The number of paupers in 1845–6, was 7,454. In 1847–8, 51,852. The railroad tolls of 1845 averaged £2,640 per mile. In 1849, £1,780.—*Ibid.*

power of purchase must continue to diminish with further diminution in the power of production, is quite certain.

We see that, notwithstanding low prices for grain, the imports are immense, averaging more than nine millions of our bushels per month. Will this continue? In answer, the domestic crop of this year has not failed, nor have there been any reasons why the export from the grain-producing countries of the world should be larger than usual. We are assured that Russia can supply fifty millions of quarters annually, and that much of it is now wasted for want of a market. She has now a market, *and so long as a bushel of wheat will yield to the producer the price of a yard of cotton cloth, he will accept even that rather than waste it.* We are assured that he cannot afford to raise it at any such price, but what else can he do? Deprived of other employment for his time, he must raise food for himself, and with the surplus purchase clothing, even if he have to starve himself to obtain the little that he wears. The error of English writers consists in assuming that there is such a thing as a necessary price. The poor labourer in India, we are assured by this same writer, obtains for his cotton no more than *the mere rent of his land*, leaving nothing for his labour, yet he still cultivates cotton to exchange for the yard of cloth with which he covers his loins.

The people of England first inflicted upon themselves a *necessity* for competing with the "cheap" labour of India in the manufacture of cottons. That produced a *necessity* for competition with the "cheap" labour of Russia in the production of food, the consequences of which are thus described in the recent quarterly report of the Registrar-general:—"The population of England has *suffered, died, and decreased, during the quarter, to a degree* of which there is no example in the present century." Emigration has gone on so rapidly, and so much in advance of immigration, that "England has now less inhabitants by several thousand than were within her shores at midsummer."

The system tends to increase man's *necessities* and to diminish his *power*. It is here shown how enormous was the difference in the prices of cotton in the two periods, and we may now look to see whether the price of cloth and iron changed therewith. From 1840 to 1844, the average price of a piece of gray cotton cloth was 6*s.* 7*d.*; from 1845 to 1849, it was above 6*s.* Here is a reduction of ten per cent. to set off against changes of 40 per cent. The average price of iron in 1845, 1846, and 1847, was 50 per cent. higher than that of the four previous years; and thus, while the cotton was lower than before, the thing which, of all others, the producer of cotton desires to use, was vastly higher. He was steadily giving more and receiving less, and it is no matter of surprise that his power of production diminished and his condition steadily deteriorated.

To this it is due that the power to pay for cotton cloth on the part of the people subjected to the system is steadily diminishing, and that "the consumption cannot be maintained." Nothing, "we are assured, but the stimulus of low prices" will enable "the existing markets" to take off the produce of the machinery of England; and, to secure a supply at low prices, every English writer on the subject is looking for what is called "cheap labour." That of the Zooloos may be had at 10*s.* per month, and Natal is advantageously situated for maintaining "competition with the States."

The "practical deduction pointed to by these facts," and that which most interests the planter, is that there must be "a check to the increase of mills and machinery," until "the increased supply of the raw material" shall bring down the price of cotton to the level of the powers of the consumers, or until "the power of purchase" shall rise to a level with the existing prices. That the latter, among the *unprotected* communities of the world, has

steadily declined, during a long series of years, is obvious, and there exists no reason for supposing that the future will be different from the past. The only remaining mode of "restoring the balance" is that of reducing cotton to the level of *a constantly diminishing "power of purchase."*

That it will be so diminished, unless the planters can determine to help themselves, there can be no doubt. The men who have heretofore raised sugar and coffee are now about to turn their attention to cotton, as likely to be more profitable than either. The people of Jamaica have been forced to abandon coffee, and sugar cannot, as their journals inform us, be any longer profitably cultivated. Why it cannot, the *Economist* informs us.

The same number, from which the above long extract is made, informs us that the sugar market is "drooping," the "expectation of a large additional consumption not having been realized." The consequence is seen in the fact, that the sugar of the distant Isle of France is quoted at 22*s.* 5*d.* per cwt., being two and two-fifth pence per pound, yielding to the shipper, after paying freight and charges, about as much as the cotton above stated to have been shipped from Bombay, to wit, one penny, and to the producer, on his plantation, but little more than is necessary to pay his rent. Under such circumstances, the labour of the people of the Mauritius becomes "cheaper," and may ultimately become as "cheap" as that of the Zooloos.

Thus is it everywhere. The late cotton planter of Alabama is trying sugar, and the sugar planter of Jamaica is determined to try cotton, under an impression that "a sufficient supply is not yet raised to meet the demand which exists for the article." The real cause of difficulty is, that the cotton planter and his neighbours are unable to obtain one-third as much sugar as they would desire to consume, and the sugar planter is unable to obtain one-third as much cloth as he would desire to consume, because the cost of both *in labour* is so greatly enhanced by the necessity for making their exchanges in the distant market of England. Were both determined to make a market on the land for the products of the land, each would obtain in return for the same quantity of labour thrice as much as now; whereas, if they continue to maintain the monopoly system of England, they must obtain even less than now, little as it is. Among the planters of the world, there is perfect harmony of interests, and those of all are to be promoted by the adoption of a system that shall tend to raise the value of labour, thereby enabling the man of Ireland, who now consumes one pound of cotton, to become the man of America, consuming a dozen or twenty pounds.

The object of every effort at maintaining in existence this great monopoly of machinery is that of preventing increase in the value of labour and land throughout the world, that commodities may be had "cheap." How great is the power exercised for this purpose, will readily be seen by all who study the sliding-scale system, by which consumption is diminished with any small advance of price, and the tendency upwards thus counteracted. The existing consumption can be maintained only at the present minimum prices, and the reason why it can only be so maintained is, that "cheap" cotton and "cheap" sugar make the *labour-cost* of cloth and iron so great that the poor cultivator of those "cheap" things cannot afford to purchase either. Dear as is the cloth to the consumers, and little as the cotton has yielded to its producers, the manufacturers have, we are assured, been working at a loss during nearly all those five years, and the profits are set down at only 1½*d.* per pound in 1845, designated by Messrs. Rathbone, in their circular accompanying the diagram given at page 75, as one of "enormous profits to manufacturers." The differences in the prices of both cotton and yarn as here given, from those given by Messrs. R., are sometimes remarkable. The cost of converting a pound of cotton into yarn No. 40, is also remarkable, and must embrace

many allowances for wear and tear, management, &c. A mill in this neighbourhood, at work upon No. 35, converts *into cloth* above a million of pounds, with the labour of 300 persons. The average wages of England are under 30*l.* per head, and this would give 9000*l.*, or about two millions of pence, *for wages of labour* required for converting a million of pounds into cloth, or two pence per pound. Notwithstanding this unceasing succession of losses, there has been, as we are assured, a constant increase of machinery for doing the work, while the whole increase of consumption is trifling. It is difficult to reconcile these statements.

Less difficult is it to ascertain what is the policy of the planter. *It is to break down the monopoly and bring the machinery of England to the cotton fields*, and there it will come whenever the producers of food and cotton shall declare to the world that it is their fixed policy *to extend the consumption of cotton by enabling themselves to supply it cheaply to the consumers*, a work that is to be accomplished by freeing themselves from the control of those who now live, and move, and have their being, by means of standing between the producer and the consumer, impoverishing the one so that he cannot continue to produce, and the other so that he cannot continue to consume.

It cannot fail to strike the reader as singular, that the clever writer of this article supposes that the system which destroys cultivation in India and Brazil has no such effect in this country. He assumes that we produce all we can, whereas we *know* that the great object throughout the South is to limit production, and that the producers are perpetually flying from lands that have been exhausted to seek new ones to be again exhausted, and wasting on the road more labour than would add to the crop hundreds of thousands of bales.

Had the planters eight years since determined that the loom *should* come to the cotton, the crop of this year would exceed three millions, and the price would be higher than it is now with one of two millions; for we should ourselves be consuming much more than a million, the purchasers of which would be found among prosperous makers of iron, who would be producing 1200 or 1500 thousand tons to be applied to the making of roads for the use of prosperous farmers and equally prosperous miners and manufacturers. Increase of price thus produced increases consumption, *and such is the tendency of protection*. Increase of price resulting from short crops tends to diminish consumption, and *such is the tendency of the monopoly system*. It destroys both the power to produce and the power to consume.

GROWTH OF AMERICAN MANUFACTURES, AND THEIR IMPORTANCE TO COTTON GROWERS.—The importations of cotton into Great Britain for a series of years—in two periods of six years previous to, and subsequent to the peace of 1815—were as follow:—

1809	260,711	1815	278,950
1810	372,160	1816	263,820
1811	257,237	1817	350,879
1812	148,958	1818	497,983
1813	77,039	1819	420,617
1814	168,708	1820	426,046
Total	1,284,813		2,237,295
Annual average	214,135		372,882

The quantity taken by American manufacturers was 531,772 for the year ending September 1, 1849. The first importations of cotton into Great Britain from the United States, of any moment, were in 1793—previous to which the supplies for Great Britain were almost exclusively from the West Indies.

Thus it is seen, that since 1820 the demand for American manufactures greatly exceeds the whole English demand in that year. How important to the cotton planter to encourage the home market, and by protection of American industry in all its branches, attract immigrants from Europe to come and labour here, where, in the first place, the Farmer and Planter are *sure to have them* for customers, and where, moreover, their bettered condition *enables them to consume* four times as much of our agricultural produce as if they remained in Europe, even were we to admit that there they would be consumers of it, though certainly to a comparatively limited extent! Thus it is clear, as Mr. Carey contends, that of all importations the *importation of men* is the one most to be desired and encouraged, and the importation of men, as he has demonstrated, always increases with protection and falls off as we withdraw protection. Will the people be for ever blinded by party names?

WHAT NOW NEW ABOUT DAIRIES AND BUTTER-MAKING?

NEWPORT, R. I., *August* 7, 1850.

EXCEPT the subject of slavery, in Congress, we know of few things that have been more discussed than the management of milch cows and dairies, and yet we flatter ourselves that the reader will find something new on both subjects, in this number of the "*Plough, the Loom, and the Anvil*"—read and judge—by J. Towers, Member of the Royal Agricultural Societies of Agriculture and Horticulture, with notes by the EDITOR OF THE "PLOUGH, THE LOOM, AND THE ANVIL."

So important are cleanliness and perfect freedom from taints of every kind, in all the operations of the dairy, that I would urge particular attention to the milk-vessels, and the construction of the milk-house itself. Where they can be afforded, vessels of glass, of wedgwood ware, or of porcelain-lined light metal, are to be preferred, as are also marble shelves, polished-tile flooring, or perhaps the new enamelled slate. Wooden utensils are generally employed; but they retain damp, and thus are apt to acquire and retain a faint musty odour. These contingencies must, above all things, be avoided.

The hours of milking are usually seven in the morning and four in the afternoon; and these, if once adopted, should be punctually observed. Some persons milk three times in the twenty-four hours, if the weather be very warm; but, under any circumstances, the cow or cows ought to be supplied with some kind of food most agreeable to them. Sweet hay is in winter to be preferred, and in spring and summer some green fodder, cut a few hours before, and a little aired to carry off moisture. This food ought to be placed in a small trough, at a height most convenient to the animal, for too much attention cannot be paid to secure her comfort. Violence of any kind ought to be avoided, for to this may be ascribed the obstinacy and other troublesome habits which milkers complain of. If a cow be kindly treated from the first, if she be at all times coaxed and agreeably fed, she will seldom withhold her milk, or be inclined to resist the dairy-maid, or kick over her pail of milk.

In every case where it is the primary object to obtain cream and butter, instead of rearing and fattening the calf, we would recommend that, so soon as possible after the entire abstraction of the "biestings," the calf should not be permitted to suck the mother, but be either brought up by hand or transferred to another or foster mother, because great inconveniences may and do result from habits formed by long indulgence; and it is a fact, however unaccountable it may appear, that when a calf continues to suck, though partially as to its own requirements, the milk *drawn by the hand* is always *deficient in cream*, so much so as to be insufficient to supply much butter.* In milking, the last drop that can be abstracted by tender and judicious "stripping" must be obtained; otherwise, as Dr. Anderson taught us long ago, the loss of the last half pint of milk would implicate that of cream to an extent equal to all the cream contained in eight whole pints of the earlier drawn milk.† The mystery of the phenomenon has at length been solved by a physiological investigation of the udder; and it has been proved that the latter rich milk, when retained, coagulates; and if the error be persisted in, either through indolence or ignorance of consequences, not only a great loss of milk will be

* This is a very curious and important fact, *if* it be a true fact, and the writer is one of the most conspicuous friends and promoters of agricultural improvement in Europe.—*Edit. P. L. & A.*

† This, as is seen, has been physiologically accounted for; yet, especially in Southern cow pens, there is scarcely a cow that is thoroughly *stripped!—Edit. P. L. & A*

sustained, but the risk of serious injury to the udder itself incurred. I refer, on this subject, to the "*Book of the Farm*," part ii., page 522.*

At whatever hours (whether twice or thrice a day) *a meal of milk* has been obtained, it should be immediately taken to the dairy, and strained into the dish through the milk sieve. A very little cold water is to be put into the milk-pail, with which it is rinsed; and then the rinsings are passed through the sieve into the body of the milk. This rinsing effects a double object; it cleans the utensils, and somewhat dilutes the milk with a pure *cold* fluid, which also is found to hasten the separation of the cream. In large dairies it would be wise to follow up the indications of nature, and to add a very small quantity of carbonate of soda, in solution. Fresh drawn milk presents a slightly sodaic alkaline reaction; and therefore a grain or two of the crystals of soda dissolved would counteract, so far, the tendency to acidity which the milk evinces.

Creaming.—In any weather cream ought not to remain on the milk beyond three milkings, or from twenty to twenty-two hours—in very hot weather only eighteen hours. Thus, if the cows be milked three times a day, the cream of the previous mid-day's milk should be skimmed off on the following morning, and at mid-day the milk of the previous evening should be creamed; again, it would be most safe to anticipate the operation by one meal, for the following simple but imperative reason—that, "the milk should on no account be allowed to turn sour *before* the cream is taken off, because the cream of sour milk always makes bad butter;" whereas, let sweet cream become ever so sour *after* being taken off *sweet milk*, and no harm will accrue to the butter."

My experience refers chiefly to the management of one cow only; and though for several years we milked only twice a day, and made butter only once a week, we never failed in consequence of the milk becoming sour before the cream was skimmed off.† A cool un-sunned dairy will rarely fail to preserve new milk.

Every time a fresh portion of cream is added to the cream-jar the contents of that vessel should be stirred with a clean stick kept for the purpose, so as to thoroughly blend the whole of its contents. These soon become sour, and on no account should be kept beyond a week, *in cold weather*, before they are churned; otherwise a bitter taste may be acquired. In warm weather the churning should be made *twice a week, however little the quantity of cream may be.*

The heat of the cream is, and has been, the perplexing and vexed question. It can be, however, definitely solved; for, if 62 degrees of Fahrenheit's scale be never exceeded, butter of good quality will be the result, even in hot weather. In winter, however keen the weather, provided that degree in the cream be obtained, the labour of churning will be trifling, for the separation of the butter will assuredly be effected in about thirty minutes. From 60 to 62 degrees furnish the *limits of certainty* at which—the cream being good—the best fresh butter of the season can be obtained; and either of the degrees can be commanded by the judicious use of ice in a cool room during summer, and, in winter, by bringing the body of cream in the jar to the full required heat, by placing it on the hob of a stove, or in a vessel of hot water, the churn itself being also washed with the same till of a corresponding temperature. The facts asserted above have been confirmed by a *steady course of experiments;* and though we ourselves were not, fifteen years ago,

* How often is this admirable work referred to, and yet we have for our stereotyped copy, bound, which we sell at $5, scarcely any demand! while the English copy cannot be imported and sold for less than $25.—*Edit. P. L. & A.*

† This sentence wants clearness—he probably means that he never failed, because he never let the milk get sour before it was skimmed.—*Edit. P. L. & A.*

fully aware of the precision which it is *now* certain can be at command, we were but too frequently perplexed by the results of a too powerful degree of heat after midsummer, and wearied out by the hard labour of churning for six or more hours, without any product, during the depth of a frosty winter.

Having thus alluded to data, which if acted on will, I think, demonstrate that no longer time than thirty to forty minutes should elapse before the perfect separation of butter in the churn, during the coldest weather of winter, and that the *quality* of the butter is not debased by the shortness of the time (even if that be from five to twelve minutes) consumed in the hottest period of summer, provided the heat be kept down to 60 degrees, I proceed to cite a few lines from the "*Book of the Farm,*" on the subject of churning:—

"I have made," says Mr. Stephens, "several experiments with a table churn, in churning cream at different temperatures and with different velocities, but never obtained good butter in less than thirty minutes; and when formed so quickly as in fifteen minutes the butter was soft and frothy. I have heard it alleged that butter of the finest quality cannot be obtained from sweet cream; but I know from experience that butter of the richest quality, flavour, and appearance *can* be made from sweet cream. It has been found that 55 degrees Fahrenheit is the temperature at which the greatest quantity of the finest butter can be obtained, and this is easily attained in a cool apartment early of a summer's morning. The churning should be done slowly at first, until the cream has been completely broken to a uniform mass, when it becomes thinner, and the churning is felt to be easier. After this the motion may be a little increased, and continued until a change is heard in the sound within, and an unequal resistance is felt to be given to the agitators; the butter may then be expected to form soon after this, and the moment it becomes firm, and impedes the agitators, the motion should cease."

The butter should be directly taken from the churn, put into a flat trough slanting in an inclined position, and kneaded by clean hands (*not washed with soap*), pressed and rolled several times, plenty of pure cold water being applied, till every particle of the butter-milk is expelled; and washing must not cease so long as a *shade of milkiness can be discerned.* The butter is then to be patted and moulded into any approved form.

Some persons object to washing with water. They say that a thorough kneading, with a very little of the purest salt, so as entirely to press out the slightest trace of fluid, is the safer mode of proceeding. Experince must decide; but in hot weather the coldest spring water must assuredly tend to confer firmness of texture, and it cannot impart any injurious qualities.*

A few words remain to be said to those especially who keep but one cow. It generally happens that a cow does not yield milk longer than during nine or ten months of the year.† Yet there are many exceptions, and this my own experience has proved; for, in the Isle of Thanet I had a cow which—

* The prejudice against the use of clear cold water has probably arisen from the fact, that the dairy women have not had the patience to expel the water completely from the butter. On many plantations in the Southern country, they depend too, on young people, to bring water, in small quantities at a time, from distant and sometimes very feeble springs, and hence water is not much more plenty, about the house of such places, than milk itself is in some other portions of the country. In this case, as in every other, *consumption is prodigiously increased*, when the supply is at hand and abundant.—*Edit. P. L. & A.*

† They rarely go so long—in many parts of the country, not more than five or six—and for this reason, because when first brought to the pail, they are ruined by not being carefully and cleanly milked to the last drop. Half the cows in the country are ruined in the milking, and the other half by want of kind treatment and good feeding. Many people think, or act as if they thought, that a cow will give milk as a drum will give music, by beating and thumping, without feeding. Hence the value of the essay in our last, translated from the French by F. G. Skinner, on the spaying of cows and the merciful use of chloroform in the process: but is there not danger in that case, that the cow will afterwards incline

after calving within twelve hours of her coming to me—failed to breed again; her milk remained good and abundant for a very long period; and, to my own great loss and detriment, I was persuaded to fat her on oil-cake for the butcher. I could never replace this cow. Mr. Stephens adduces a variety of these anomalous instances; one in which a cow belonging to Mr. Ball, near Hampstead, continued to yield milk for seven years subsequent to her first and only calf. If (I can assert) a barren cow prove a good and steady milker, she is invaluable; and a wise economist will be very unwilling to change a certainty for an animal which, under ordinary conditions, must involve a great deal of trouble and anxiety.

A BIG SHEEP—LATE GREAT EXHIBITION IN ENGLAND.

If we had room, we would like for once to give a full account of the late great fair of the Royal Agricultural Society, in England, and of the Dinner and dinner speeches, particularly those by Mr. Lawrence and Mr. Rives, and particularly too the whole list, an account of the display of machinery and implements. An English paper, which contains a very full account of the exhibition, represents Mr. Lawrence's speech as "the great point" in the whole affair of the dinner exercises.

Mr. Rives is known to be a practical farmer, on a large scale, fond of the pursuit, and familiar with its literature as well as with its practice a-field.

It might be no disadvantage to judges at American cattle shows to read the very minute and very critical observations made in the English agricultural papers, by committees and others, on every department of the show, evincing a degree of minute and practical familiarity, which can only be the fruit of a life of experience and close study—such as makes the mariner familiar with the smallest details of his ship and profession.

Remarking on all the classes of "pigs," as they are invariably called, the reviewers of the show say, for example:—

"No. 525, one year and three months, is one of the finest animals in the yard. His sides and top, from ear to tail, are perfectly straight—nothing equal to them in the yard. He has, however, a slight deficiency in quality to the touch; his head is scarcely correct, and is not quite fine enough to compete for small breed with the full blood Leicester. His girth is sixty inches, and length fifty-seven inches. Mr. Maws' (Tetley Crowle Lincoln) boar (510) is an astonishing animal. He has too much hair for a competition of this sort, and is rather too round in the back and strong in the bone; otherwise, so far

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too much to fat, and diminish proportionably in her lactiferous secretions? We know that emasculated fox-hound bitches are apt to become too fat for a hard sharp run.

After all, and on considerable and close observation, we can aver that, for the peculiarly rich and fine flavour that gives excellence to butter, there is none equal to that which is found in the Philadelphia market—Baltimore is, or was, No. 2—but throughout the whole country, at leat including Washington and east of it, there has within our personal experience been great improvement in this article, so much so that any hotel keeper who gives bad butter to his guests deserves to be well cobbed. For ourselves, we hold that there is no such thing as middling, passable butter—and yet more, let us never hear of "*cooking butter!*" That which is not fit to come to the table, pure, clean, neatly served up, and free from all bad odour or taste, ought to be put on the cart-wheels, or in the slush-tub, and nowhere else. Any man *may* do without butter if good, for any cause, cannot be had; but *bad butter* should not be allowed to pass muster, even in a penitentiary.

One of these days, when we can get time (will that ever come), our firm purpose is to go out on a visit to some of the good dairies near Philadelphia, and there ask leave to help the dairymaid to skim her cream and churn her butter, and if we don't get to the bottom of all her secrets, it shall be because, like her favourite cow with her milk, she secretes and holds something back that ought to come to light. In this effort to get the best information on a most interesting topic, we shall but humbly imitate the example of Mr. Jefferson, who, when minister to France, went to Parma, and there watched the movements of the dairywomen from the rising of the sun to the going down thereof, and from his notes gave us the best essay extant on the manufacture of the famous *Parmesan cheese.*

P. S.—Since reading the proof of the above, a lady, practically conversant with the mode of managing cream and making butter in Chester county, Pennsylvania, has promised to give us a letter on the subject.—*Edit. P. L. & A.*

as regards plumpness of form, and perfect evenness of outline, he excels everything in the yard. Rotundity is his characteristic, to a higher degree than any other animal. His girth is sixty-nine inches, and length fifty-seven, being twelve inches more in girth than the prize animal, and same girth as first prize *large* breed. Mr. Savery's boar (518) is deficient in his forerib, to an extent that disqualifies him altogether in a competition of this sort. Two boars of Mr. Fisher Hobbs', Nos. 510 and 511, are commended. No. 508 is a neat pig, but small and light in the fore-quarter, and the head is not broad enough."

Of the rams the same writer says:—

"Mr. Garne's ram, 467, forty months old, which obtained the prize of 20*l.*, $100, is very big, and beautiful in every point, having an especially good neck. The prize of 10*l.* was awarded to 471, bred by Mr. Lane, of Eastington, Gloucestershire. It is fifty-two months old, a most extraordinary animal, of immense frame, very broad, full, and deep chest, colossal neck, great overhanging cushion; weighing probably 80 *lbs. per qr.*, yet having a very small head and marvellously thin bone."

There hung in the larder of the U. S. Hotel, Philadelphia, for some weeks last winter (brought over in a steamer, and sent by his friend Mr. Homan, of Boston, to Mr. Mitchell) a quarter of Leicester mutton that weighed sixty-eight pounds.

On Breeding Horses.—There is nothing reared or bred by the farmer, which will more certainly command a good price at all times than a *first-rate horse;* yet how few of them do we see out of the great number that are bred and fed? One reason is the little attention paid comparatively to the *qualities of the mare*, even yet more than the foolish pampered, phlethoric condition of the stallion.

The reviewer of the great exhibition, already referred to, on the subject of horses says:

"We now come to the other sex, being Class IV., for mares and foals, for agricultural purposes, and here, as well as in the next class, the Suffolks reign supreme, taking both first and second prizes; and here we may well pause for a moment, to inquire how it is that the Suffolks are so successful in obtaining prizes at these shows—a question which we feel no difficulty in answering, inasmuch as the class we are now noticing affords a striking proof of the justness of the explanation we have to offer, viz: that it is by the *most rigid attention to the excellence of their mares*, that the Suffolk breeders are enabled to rear such very superior horses as they succeed in producing. Any man, by the payment of the requisite fee, can avail himself of a first-rate horse; but it requires 50 or 100 times the amount of such fee to procure a mare equal to such horse, in all respects; (100*l.* $500 was the price asked for No. 282, the mare to which the first prize was awarded, and 50*l.* for the foal.) There is no peculiar virtue in the colour of the Suffolks; indeed, we would prefer a dark-bay or brown; but it is that animals of this peculiar colour have received very great attention, and in consequence have been considerably improved."

Some days since, on a flying visit to Baltimore, we saw in Mr. Dukehart's stable, a very nice pair of large ponies, bred and reared on the beautiful estate of our lamented friend, Col. Emory, by his son; one secret of whose thriving is, that he breeds horses for use or sale, rather than for the precarious profits and expensive amusements of the turf. These colts, being still in pulleys, we could not so well judge of their form and points; enough, however, could be seen to show that Maryland farmers have no occasion to send away four or five hundred bushels of wheat into New York or New Jersey, for what they can as well raise in their own State for $100—to say nothing of the amusement, and the personal and just pride and gratification, of raising *their own horses.* When agricultural societies do give premiums for matched or single geldings, it should be to the farmer who breeds them (*within the State*), and not to the chance owner, whose only merit in the case sometimes lies in the length of his purse. Horses are *very expensive machines at best*, in regard to which too much caution cannot be exercised in the bestowment of premiums. In New England they drive very fast horses, because time becomes very precious where the loom and the anvil are very close to the plough, but there they very rarely give premiums to horses of any kind.

HOW POPULATION ENGAGED IN OTHER PURSUITS GIVES VALUE TO THE LAND AND LABOUR OF THE CULTIVATORS OF THE SOIL.

ASTOR HOUSE, N. Y., *9th August*, 1850.

IN New York, whortleberries or huckleberries (which, where we went to school, were left for the *birds*, or to rot on the bush), are worth more than the finest grapes (such as sell in Boston for seventy-five cents a pound) would be at a distance from the towns, and where all are engaged at the plough. Here, in this wonderful establishment, the *Astor House*, New York, they are now using one and a half bushels a-day of whortleberries, and from 1000 to 1200 eggs a-day, and from 400 to 500 quarts of milk a-day, and from 500 to 1000 pounds of beef. The freight on berries alone, from New Jersey to New York, it is said, has been $100,000 a year.

Thus it is that population makes the bush to yield its berries; the hen to lay her eggs, and the cow to yield her milk: and what thickens population? *diversity of pursuit.* By the by, people in the country, of whose ways and habits we profess to know something, pass by, every day, things that when they come to live in town, they regard as luxuries. What *farmer* sends to the woods, or fields and fences, abounding in whortleberries and blackberries, in a regular way to have them on his dinner table, sprinkled over with grated loaf sugar, as a pleasant and wholesome dessert, perfectly within his reach every day? We apprehend very few, where these things most abound, and where cultivated fruits and vegetables are most neglected. Yet it would amaze him and "do him good," to see how these simple wholesome wild berries are devoured in the towns, at the hotel tables, by wealthy and fashionable people.

Apropos of blackberries—We wish some farmer would, now that they are in season, mark such bushes as bear the largest, and sweetest, and freest from seed; and transplant, and prune, and cultivate, and see if they cannot be as much improved as the apple and the grape have been by cultivation. To such perfection have the Chinese carried the art of improvement in this way that they have variegated the *common bamboo* into more than an hundred kinds—having even succeeded in rearing a *black variety*, much esteemed in the gardens of the wealthy. Ah! who has not occasion to realize the expression of Mr. Cooke, Earl of Leicester, when he said that agriculture was "the most beautiful of all sciences!" But it never was, and never will be carried to great perfection, in a country sparsely populated, and whose home industry and commerce are not encouraged.

ECONOMY OF TIME. STRENGTH OF OXEN.—Returning some days since, on foot, up the hill from bathing before breakfast, at Newport, we fell in, cheek by jowl, with a teamster and his yoke of oxen with a load of hay for which he was to receive $15 per ton. Well, my friend, *how much can* your oxen haul at a load up this hill? "Well, I don't know, but I guess they can haul two ton at a heft." Two ton with one yoke, or two, in the ordinary way, of *stun*, instead of three yoke as in the planting States creeping along, with one hogshead of tobacco, weighing 1000!—and why is it so? Why, because employments are so diversified among these Yankees, that a man has constant demand of some kind for his labour; and both his labour and his time, and his food, and the food of his animals are all too valuable and precious to be wasted in the use of slow, ill contrived, incompetent, animate or inanimate machinery! Hence it is that where employment is diversified, and population concentrated, all things are improved, and everything made to work together to the greatest advantage. Thriving people can't afford to throw away time on bad machinery.

From the American Farmer.

THE VALLEY AGRICULTURAL SOCIETY OF VIRGINIA.

CHARLESTOWN, JEFFERSON CO., VA., *May* 20, 1850.

To the Editor of the American Farmer:—

SIR:—On Monday, May 20, there was a meeting of the Valley Agricultural Society of Virginia, embracing the fine counties of Jefferson, Clarke, Frederick and Berkley. The Society was organized by the election of the following officers:

President—Lewis W. Washington, of Jefferson.

Vice-Presidents—Hon. Richard Barton, of Frederick; Hon. C. J. Faulkner, of Berkley; A. R. Boteler, Esq., of Jefferson; T. F. Nelson, Esq., of Clarke.

Secretary—R. W. Baylor, Esq.

Corresponding Secretary—Dr. R. Blackburn.

Treasurer.—Andrew Kennedy, Esq.

Board of Managers—Jas. D. Gibson, Esq., of Jefferson; Thomas C. Pendleton, Esq., of Clarke; Martin Eichelberger, Esq., of Jefferson; Francis Peters, Esq., of Berkley; John Walls, Esq., of Frederick.

This looks all very well on paper, but Virginians need not expect their resources to be developed, and their agriculture to prosper, as long as they are content to import cloth and iron from England; leaving inexhaustible beds of coal and iron sleeping where they have slept for ages, in the bowels of their own State, and their mountain pastures unstocked with fine-wooled sheep, that would yield them hundreds of thousands of dollars—and while too, they are content to waste as much on bad roads, with imperfect machinery of transportation, as would build them mills and forges, making a market on the land for the produce of the land—all the while crying free trade! free trade!

As to their Society, as we have said, the material is good, the men are first rate—let us see what they *will do*. But have they not had societies for half a century? Have they not been coming all that time, and departing, like the ghosts in Hamlet? and does the valley average as much of wheat throughout, per acre, as it did thirty years ago? We, who travelled through it then, a keen observer, should say not! And by how much less now than then? What do you say, Col. Allen? or you, Mr. Washington? or you, Mr. Barton? Just thirty years ago the Fredericksburgh Agricultural Society said, in a memorial to Congress:—"To buy as cheap as you can, no matter where, and to sell as dear, is the maxim which should regulate the commerce of individuals and nations." And where is Virginia now? In what has she advanced—what is it that nations of *starving, famished people cannot* make cheaper than we?

The best free trade we can maintain with such a people, is to give such encouragement to labour, as will tempt them to come and settle among us. Then they will *surely* be good and able customers, not only to the farmer and planter but to the hatter, and shoemaker, and weaver, and saddler, and carpenter, and bricklayer, each to the other, and all to the farmer. If the people of Virginia had begun to act upon this principle, even as late as 1820, she would now have two millions of population—all her valleys would be threaded with railroads; and steamboats and tobacco ships would be bringing thousands of immigrants from Europe directly into her rivers, to work up her wool, her iron, her coal, her timber, and her leather; and to eat on the spot her flour and her beef, her mutton and her potatoes, from which such heavy deductions are now made for the cost of transportation, and commissions, going over bad roads to distant markets. But, says the political partisan, "let us sell in the dearest and buy in the cheapest markets, wherever to be found;" and to this the farmers say—*Amen! amen! so be it!*

OAT HAY.

COHOES, N. Y., *July 29th*, 1850.

IT is now, we believe, generally admitted, that both wheat and grass are the better for being harvested before they are dead ripe; and that with reference not only to their nutritive qualities, but to the saving to be otherwise accomplished by early cutting. There is, however, probably no crop in regard to which early cutting may be so economically practised, as in the case of *oats;* especially to the extent that they are to be used on the farm, as food for domestic animals. In that case, we are satisfied, by various observations and reflection, and more especially by an essay in the "Quarterly Journal of the Royal Agricultural Society of England," that it would be a very considerable saving to cut the oat crop, when the grain is fully formed, even before, or at all events as soon as it is dried of its milk.

Doctor Voelcker, Professor of Chemistry in the great Agricultural School at Cirencester, gives the details of careful chemical experiments, which go to show distinctly that the relative proportion of nutritive matter was larger in oats cut green than in oats cut as soon as quite ripe, and he publishes extracts from letters to prove that the deductions of science are fully corroborated by the experience of practical men.

Does it not, indeed, stand to reason that the sooner the straw is turned into hay, after it has performed its office of conducting to the grain the elements that impart to it its nourishing qualities, the more nutritious will be the straw itself, and the more soluble its condition for the purposes of digestion, and for making better manure? All these considerations derive additional force from the fact that oats are very often, and perhaps ought always to be fed along with their own straw; being first cut up altogether and mingled by the cutting-box. On the whole, there would seem to be every inducement, and no good objection to cutting oats, at least for the use of the farm, as we now cut clover or timothy hay, before the seeds are dead ripe, and the straw entirely desiccated. Indeed, were it not for the increase in the cost of transportation caused by the increase of bulk, there is no palpable reason why oats should not be sold thus, cut up, in the common market, as food for town horses. The case is different in Scotland, and in all countries where oats make an important element in the diet of the people—but even for flour, it is asserted that wheat is the better for not being dead ripe. Might not the proportion of the grain contained in a given bulk of cut oats be measured by the *weight* of a given quantity, to be ascertained by experiment? The author of the essay referred to, quotes from a letter of Mr. James Walker, who says:

> "My own experience at the Cape of Good Hope (though confined to young horses) leads me to assert, that oats thus reaped and cut into chaff half inch to inch length, will go one-fourth further than the same when allowed to ripen and used in the ordinary way. I need hardly allude to the evident saving of labour—saving of there being no risk of the best grain shaking out and being lost, the different appearance the manure heap would have, &c."

A Mr. Stewart's experience, too, was in perfect accordance with the foregoing. He says that his horses preferred this fodder to every other kind of hay. In truth, is there any good reason why such distinction should be made between other grasses and oats, in their management? Is it justified by any essential difference in their nature and (except as already excepted) economical uses? or is the practice founded, like many others, on early impressions and the force of habit?

It was our purpose to have called attention to this subject at an earlier

day, while the crop was growing, in hopes that Farmer PROGRESS, more enterprising than his neighbour HOLDBACK, and not content to move on forever in the same old jog-trot, would try an acre, for his own satisfaction. For ourselves, be it confessed, the subject borrows its attraction from its novelty, *combined with its apparent reasonableness.* Time is precious, and seems the more so as we grow older. Let us, therefore, employ it in bestowing our reflections and thoughts not on what is old, stale, and unprofitable, as a tale twice told; but on things new, and such as promise to be useful as well as new.

In Europe, as we lean from Skinner's edition of "*Stephens' Book of the Farm,*" there are a much greater variety of oats cultivated than is generally known in this country. In the museum of the Highland Agricultural Society of Scotland, there are deposited fifty-four varieties. The natural classification is obvious; one kind has its panicles spreading and equal on both sides, and tapering towards the top of the spike in a conical form; the other has its panicles shortened, nearly of equal length, and all on the same side of the *rachis*—that is, the stem running through the head of the grain. The figures here represent both kinds, *a* showing the first and *b* the second;

a is the prolific potato oat, which is beardless, commonly cultivated in Scotland for the sake of its *meal*, and *b* is the white Tartarian oat, which is bearded, and used more exclusively for animal food. The natural classification by the grain consists also of two forms; the one a round, plump grain, and an elongated, thin grain, having a tendency to show awns, as at *b*;

the *a* kind being cultivated on the best lands in the low country, the other on poorer soils and in high districts. The first is tender, and liable to

shake with the wind; the other is hardy, and able to resist the tempest. The former is cultivated chiefly for human food, yielding meal largely, the latter being raised chiefly for the food of horses. The straw of the former kind is strong and inclined to reediness, and of the latter, is fine, pliable, and makes an excellent dry fodder for cattle and horses, there being a good deal of saccharine matter in the joints; the former is considered late in coming to maturity, the latter early, and is consequently so designated.

Scotland is the great country for oats, the crop giving usually from forty to seventy-five bushels, the weight varying from thirty-six to forty-eight pounds per bushel. High, elevated localities give the best oats as well as the best potatoes. Alleghany County, Maryland, is famous for both. In Montgomery, the black oat is said to be more prolific.

In Scotland, children of all ranks are brought up on porridge—*Scottice* parritch—verifying Burns' assertion :—

"The halesome parritch, chief o' Scotland's food."

Oats are said to give even meal when they yield half their weight in meal.

We find no mention made of oats in Scripture, says Phillips, which expressly states that Solomon's horses and dromedaries were fed with barley. But they must have been known in Rome at the time of the Christian era, as that profligate tyrant, Caligula, fed Incitatus, his favourite horse, on gilded oats, from a golden cup.

AN "ENTIRELY NEW VARIETY" OF WHEAT?

MAPLE HILL, GENEVA, N. Y., *July 30th*, 1850.

MESSRS. J. S. SKINNER AND SON, PHILADELPHIA.

GENTS.—I have this day taken the liberty of depositing at the express office a small package, directed to your address, containing a sample of wheat of an entirely new variety in this section of the country.

I accidentally obtained a few berries five years ago, and have now the product of four and a half acres, or thereabouts, standing in stacks on the ground "as thick as leaves in Vallambrosa."

The most noted farmers in this vicinity estimate the yield at from 40 to 50 bushels per acre.

From the fact of its ripening some ten days later than the ordinary varieties of wheat in this climate, I am led to suppose that it would be well adapted to the climate of your State.

If you find it to be a new variety, and wish a more detailed statement of its *rise and progress*, I shall be pleased to send you all the information, which, however, is very scanty, I am in the possession of.

Respectfully your obedient servant,
PAUL MITCHELL.

We have disposed of the sample of wheat in a way most promising to insure it a fair trial and a "true presentment" of its qualities as they may appear, in a wheat district of Maryland. We shall be glad to have the information, only premising that we hope it did not come "out *of a mummy*!" We shall be glad, too, to learn the yield by actual measurement.—*Ed. P. L. & A.*

HOW TO HAVE CIDER EQUAL TO CHAMPAGNE.

WASHINGTON, *July* 15, 1850.

To J. S. SKINNER ESQ., *Editor of "The Plough, Loom, and Anvil."*

MY DEAR SIR :—I have this day received your very kind letter, addressed to me under date of the 12th instant, in which you remark, "how few, except you, can say, that they have lived to see, and to have personal intercourse with all our Presidents : and with nearly all of them friendly and confidential relations."—In the years 1774–75, looking on, tho' then a boy, the movements which brought about our Revolution, I took a deep interest in all the trying scenes which occurred during its progress, to the period of its glorious issue. This and subsequent circumstances afforded me opportunities to form an intimate acquaintance with, and on all occasions to be most kindly received by, the distinguished public men of whom you speak. Mr. Monroe was a native of my county, and our near and highly valued neighbour and friend, until he entered the revolutionary army. At the end of that war he became public property, and he so remained nearly as long as he lived. And when our recently deceased and cordially lamented Z. Taylor became Major-General, and finally President of the United States, I confess I feel gratified at the fact, that my humble, though zealous aid was used to obtain for him his first appointment as a lieutenant in the army of the United States. All this awakens in me the recollection of highly interesting reminiscences, on which I could largely comment, but I forbear to indulge in them, or you might conclude that I have adopted the prevailing fashion in *high places*, which is *all talk* and *no cider*, a fashion which the old cider-drinkers in a colony called Choptank (the name of a creek in Virginia, on the river Potomac) denounced. To escape from this, I will comply with your request to be informed, how I *make* and *manage cider*, of which, you say, you have heard very favourable accounts. Before I do this, I will promise, that there is scarcely a more prevailing mistake than that which assumes, that *good cider* can be made from almost every kind and variety of apple. As well might it be assumed, that good wine might be made from every kind and variety of grape; which all experience has shown to be impracticable. By an unseen and unknown economy in the formation of fruits, each is adapted to an appropriate purpose. That such is the destiny of the apple, my experience, during more than seventy years past, attests. I have never seen cider of the *best* quality, except made from the *Virginia crab-apple*, of which there are several varieties; all equally good. The much celebrated Newark and other northern cider, though an acceptable beverage, cannot compare with the crab-cider properly managed. This I state from a comparison of my cider, in the City of Washington, with a specimen of the best from Newark. In order, then, to make first-rate cider, I assume that the *Virginia crab-apple* must be adopted, and managed as follows:—About the middle of September in each year, all the apples which, from any cause, have fallen off the trees, are to be carefully taken away, not leaving one. These may at once be ground, and will produce cider for present use, and for vinegar. During the last week in October the apples are to be taken from the trees, also all the sound apples which may have fallen off, and placed in the apple-house. During the first week in December, by which time nearly all the water material in the apple will have evaporated, and the apple become mellow and easy to crush, they are to be well ground by an apple-mill, being careful to throw aside all unsound apples. From the mill they are to be thrown directly into the press-basket, placed on a platform, having a deep channel or gutter cut around the press-basket, on one side of which gutter a channel is formed through which

the expressed juice is to pass from the platform, into a large, dry and clean vessel. To intercept from passing into that vessel the pulp, seeds, and gross sediment of the crushed apples, a Dutch blanket twice doubled is placed under the gutter through which the juice flows into the aforesaid vessel; and from which, the juice thus freed from all extraneous matter, is put into dry and perfectly clean rum hogsheads or wine pipes, the bungs of which are to be immediately closed, and to prevent the access of air into the vessels, a batch of wet clay is to be placed over the bung. In that condition the cider is to remain in a cellar three weeks, by which time such sediment as may have passed through the blankets will have settled at the bottom of the cask. In order not to disturb it, the cask is broached about four inches below the upper chime of the cask, and the cider drawn is put into a perfectly dry and clean quarter cask. When the cider ceases to flow through the vent thus made, a new one is to be made about from four to six inches below it; and so on until they arrive at four inches above the lower chime of the cask, thus leaving the sediment quiet. The quarter casks into which the cider thus drawn is put, must not be filled up to the bung hole by about two inches and a-half; in order to leave room for the expansion of the cider, when on the occurrence of warm weather it undergoes the vinous fermentation. These casks being thus filled, are at once closed at the bung in the manner stated above, so as to exclude air, the certain cause of the deterioration of the juice of all fruit. In this condition the cider remains until the last week in May, or the first week in June, when it is put into bottles perfectly dry and clean, which are to be securely corked, the corks kept in place by twine and dipped in melted rosin or sealing-wax. That done, the bottles are placed on the cellar floor on their *sides*, not on their *ends*, in layers of wet sand; the sand to be watered once in two weeks during hot weather; this is to preserve the bottles from rupture by the expansion, by heat, of the fixed air in the cider. Cider thus made and managed is the pure juice of the apple; and all, without exception, who have tasted it, pronounce it equal, if not more pleasant than the best champagne, of which, to say the least, it is a worthy representative and substitute.

You ask me, "Was not the practice of planting and cultivating orchards, and culinary, and flower gardens more general formerly, within your recollection, than now?" During many years of my early life, all those matters were more extensively, and much more effectually attended to in Virginia, my native State and continual residence, than they are now, and during many past years. The time was, when *all Virginia east of the mountains abounded in orchards.* Where once was to be seen more than a hundred acres covered with fine productive peach trees, the same ground is now covered with pine and other trees of second growth. The cause of the annihilation of our orchards, was the introduction of whisky as a substitute for peach and apple brandy; of which many planters made from one thousand to three thousand gallons annually, besides tobacco, corn, wheat, &c. The peach brandy sold for one dollar, and the apple at seventy-five cents a gallon. But when whisky appeared, out of which an Irishman boasted, as a high eulogy on America, that he could get drunk for nine-pence, away went our orchards, and their brandy. As to the culture of culinary and flower gardens, as a general matter, we are far behind those operations in my early times. A goodly number of exotic shrubs and flowers have been added to the old stock. But the arrangement, and especially the cultivation of our culinary and flower gardens is very much inferior to what they once were. Wishing for you success in your zealous and untiring efforts to promote the interest of the Plough, Loom, and Anvil, I am, dear sir, with sincere respect and regard, your friend,

JOHN TALIAFERRO.

A YOUNG FARMER'S EXPERIENCE.

Mr. Edward Reynolds, a genuine scion from a good old stock in Calvert county, Maryland, while still a commission merchant in Baltimore, has had the good luck and the good taste to secure some good *terra firma* in his *native county*, in which, we believe ourselves to have been the first to proclaim, there is as much, or more naturally good land, in proportion to the whole area, than in most, if not in any county in the State.

We are glad to see by a communication of his in the old "*American Farmer*," that agriculture is with him not a mere horse-mill business, ever going round and round, in the same track, without thought or inquiry. He wisely and honourably makes its pursuit a matter of intellectual as well as physical exercise. We never see a name that belonged to one of the old families of "that ilk" that we are not transported back in imagination to a period of remembrance very early in life, just at that epoch when *party spirit*, like the famous poison tree of Java, raised its hideous crest and diffused its poison, alienating some of the oldest and best friends, and embittering, even as we fear to the present day, the cup of social enjoyment. Yes! it was but last night, restless and wakeful from sheer over-work and exhaustion, that we asked ourselves —alas! where are the Grays, and the Wilkinsons, the Reynolds' and the Chews, the Kents, the Blakes, and the Dares—the Taneys, the Dukes, the Brookes, the Smiths, and the Mackalls, and the Morsells: well-bred and fair minded men and women—models of either sex for all of nobility that plain dealing, and truth, and honour, and genuine hospitality could confer? Who and what are their successors? what the condition of society now, in a county where then, men so lived that, as they ceased to live they might say with the lamented Taylor, "I am prepared—I have endeavoured to do my duty;" or with the great Apostle,

> Thus sainted Paul, "Oh death," exulting cries,
> "Where is thy sting? Oh, grave, thy victories?"

True, the pious may answer—old Cato* is gone—the grave which "proclaims the sacred dogma of equality" has raised him to a level with his betters—followed by that wicked sinner, old "Sam Jack;"† for so many years the sole officiating priest at the shrine of the giddy and light-hearted goddess Terpsichore —but that is not the question—they have indeed gone the way of all flesh, and the Apostle Peter says "all flesh is as grass. The grass withereth, and the flower thereof passeth away." But the real question is, have her schools, her lands, her cultivation, her churches, her religion, her *morals* been improved during the past forty years—that we, one of the humblest of her stray children, have been labouring elsewhere, doing the little we could for society, and alas! but little for ourselves. Are the people less envious and covetous than formerly? Do they live in stronger abhorrence of ignorance, and drunkenness,

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* Mournful and kindly reference is here intended to a gray-headed old servant of that name, of good humour in his way, belonging to the editor's father. Cato, after corn was gathered and husked, and the time for social interchanges of innocent fun and frolic commenced, was devoted with his fiddle for the residue of the season, to himself and the neighbourhood for miles around.

No dances could be carried on without "old Cato"—whether to "hey" or "chassé," to "change" or "turn your partner"—Cato's word was the law. Sometimes his fiddle had but three strings—it might even be but two—still the spirit was up and the dance went forward. Is there *any* one left, except one or two dear old ladies, that we wot of, who can remember these good old times?

† Mr. Jack, then commonly, and here not irreverently called "Sam Jack," for many years held undisputed sway as the only dancing master in the county. It was yielded to him as by common consent, as his Province; and no knight of the bow dared to invade it. Ah! let us respect the memory even of such men, for they acted well their part; and though destiny made it an humble one, who can do more than that? If the time has been, we trust it never will be again, that we would willingly withhold the tribute of a kind word even from a dog that plays his part truly and faithfully in the great drama of life.

and gambling, and backbiting, and low vices? Let us trust that all has gone on for the better—we only ask for information.

The reader will excuse us, it's our own native county.

"Breathes there the man with soul so dead,
Who never to himself hath said,
This is my own, my native land?"

To return to Mr. Reynolds' experience—he says:

ACTION OF GUANO, BONES, POUDRETTE, &c.

BALTIMORE, *July 17th*, 1850.

To the Editor of "The American Farmer."

SIR:—I promised, some time past, to give you in writing the result of my experiments with the different sorts of "bought manures."

You are aware of the fact, that nearly all of the "bought manures," (as they are termed,) are looked upon by farmers *very dubiously*; and I can assure you that it is well, as it regards many of these manures (so called at least), that this opinion of them does obtain among farmers, else many of us would have paid dearer for our "whistles" than would have been desired. Already there are some "burnt infants" among us: hence the skepticism of farmers, as to there being really any "new," and at the same time "true thing under the Sun."

Since 1843, I have been trying to find out which is the best of all these "new things," and have now, after having been very considerably "humbugged," settled down upon bones and guano—although even the last named, in a very dry year, has also "cheated" me; but this is by no means its character, as I am constrained to admit, that after having tried it on all sorts of soil, and perhaps as long, if not longer, than any other person in the State, it is my opinion that when properly applied, with an average fair season, it is a *very powerful* fertilizer. My mode of using it is, when applied on *tobacco*, to mix one and a half bushel of the Peruvian (which is ordinarily 100 lbs.) with one bushel rich earth, and one bushel plaster, which admits about the one-fifth part of a gill of the mixture to each hill for every 5000 hills—and putting it in the centre of the check before being scraped—so that when the hill is made, it lies beneath the plant. On *wheat*, I apply three bushels of Peruvian guano, equal to 200 lbs., mixed with one bushel plaster, and one bushel rich earth to the acre, sowing on the surface and ploughing it in as soon and as deep as possible, after it is sowed. The past spring I have put 300 lbs. to the acre, on thirty acres *corn*—being half of a field, on a farm in Calvert, mixing with it the same quantity of rich earth and plaster, and sowing on the surface, ploughing in at once very deep, using the cultivator only in working it afterwards.

I do not intend to use it at all with *corn* hereafter, and not because I do not think it also a good fertilizer with this crop (as my corn on my Calvert farm, upon which it has been used, now shows *very fair*), but only because it has never failed to pay me *threefold* better on wheat, than on anything else. In order to test its virtue, it is essentially necessary to plough it in deeply, and stir it as little as possible afterwards.

Bones.—Of these I have used both *ground* and *crushed*, and always to advantage at ten to twenty bushels per acre; bought from manufacturers here, and agents of houses in New York; but am using the crushed, dissolved by oil of vitriol, as prepared by myself on my farm in Calvert in the following way: The bones (which we buy in the neighbourhood at fifty cents per 112 lbs.), after breaking them with a small sledge hammer on an old anvil, we put at the rate of three bushels in one-half of a hogshead, and apply to that quantity seventy-five pounds oil of vitriol, filling up the half hogshead to within eight inches of the top with water, letting them remain (but stir the contents occasionally with a stick) say two to five weeks, according to the quality and strength of the vitriol; then start the contents of the half hogshead into a large iron kettle, apply a slight fire, and the whole contents will, in less than an hour, be reduced to a perfect jelly. We use two half hogsheads at once, to prepare it expeditiously.

We then mix the contents of each kettle with a horse cart load of rich earth, or ashes, throwing in a half barrel plaster, mix or compost it handsomely, and use at pleasure, on an acre of land with any crop you choose, and you will have permanently improved two acres at the following cost, viz:

Bones,	$1 50	
Vitriol,	3 75	
Plaster	1 12	—$6 37, or $3 18

per acre, and this may be repeated so as with proper attention, as much lasting improvement may be made each year, as many farmers derive from their barn-yards. Bones in any form never fail to show their striking effects on clover and other grasses. But either bones or guano will scarcely ever fail to produce a better crop of clover, which, with the in-

creased quantity of straw (particularly when guano is used) will enable and encourage the saving of larger quantities of barn-yard manure, and which must inevitably cause a lasting improvement.

Poudrette, I have used also to good advantage, particularly on clay lands, at the rate of six to eight barrels per acre (Mr. Baynes of this city prepares the best article, I think, ever made, certainly superior to any I ever used). It is a first-rate top dressing on young clover in spring, at two to three barrels per acre. This article has been prepared so badly heretofore, that a great quantity of it was really worthless—Mr. Baynes will, I hope, raise its character.

"*Agricultural Salts*," "*Generators*," and "*Regenerators*."—Of these, what shall I say—I have tried them on corn, wheat, oats, clover, and tobacco—but have yet to discover that they ever generated anything for me, though I have heard them sometimes well spoken of.

I will bring this long article to a close by stating, that although I am now using large quantities of "bought manures," and have done so since 1843, yet every year's experience only increases my confidence in the barn-yard system, which I never in the least abandoned; and am now making greater efforts than ever to increase my quantity of barn-yard manures annually.

I must not overlook "*Ashes* and *Lime*;" these, however, speak for themselves—they want no trumpeter. If you wish grass and clover, and can haul these, buy them (at a fair price) before everything else; my farms are too far from *tide water* to haul them advantageously, though I have used both partially, and always with signal success.

Yours, &c. ED. REYNOLDS.

Will Mr. Reynolds favour us with his opinion of the intrinsic value of barn-yard manure, manufactured out of straw alone, or corn fodder, by simply passing them through the animal machine? How far would he haul it if given to him, or will it pay for hauling—especially after it has been exposed, as it usually is in barn-yards for months, to washing rains and drying winds? Ask Mr. McHenry, of Hartford county, if he would haul such manure more than half a mile, if supplied to him as a "gracious gift."

If such manure could be kept from exposure to the weather, and manufactured from provender, cut up and seasoned with a little oil cake or roots—or if, when applied, it could have an addition of bone dust, then it would tell a different tale.

In our country, turnips are so little cultivated as a field crop, that nobody speaks of the effect of artificial manures in increasing them—whereas it is to that crop, the great basis of improvement in England, that artificial or bought manures, and especially guano, are found to be most advantageous.

The learned and very exact editor of the "London Agricultural Gazette" says:—

For the reasons already named, it is obviously impossible that the principle of applying manure to every crop can be carried out with the ordinary resources of the farm; and for the full development of this system artificial manures are evidently the only available means within our reach.

The result of past experience has been to establish most clearly the value of these manures for the growth of turnips; but their application to the cereals (though undoubtedly useful) has not been quite so successful. Whilst many thousands of acres of the former have been grown with artificial manures alone, we dare not depend upon them exclusively for a crop of wheat or oats. In the present state of our knowledge, it would be difficult to assign a reason for this result of our own observation and practice on a wheat soil. We by no means assert that artificial manures are useless to corn crops. Only the complete success which has attended their use in the case of turnips makes us desire a similar result for the cereals. Whether this will be brought about by improvements in the mode of preparation, or greater skill in the application of these valuable manures, time alone can decide.

In the meantime we are glad to be able to report on the result of a series of experiments, that artificial manures are likely to prove very valuable for the clover crop. Should our anticipations prove correct in this instance, it will be a great boon on strong soils, where clover has hitherto been the only or principal green crop.

It will be borne in mind that in England, as in some parts of this country, plaster does not act on clover, as it does in many parts of Maryland, and other of the United States.

A NEW APPLICATION OF MOTIVE POWER.

ONE of our objects in "The Plough, the Loom, and the Anvil," is to promote labour and time-saving improvements in all sorts of machinery—for the more time saved in the transportation of men and other commodities, the more there will be left for productive industry of every sort. This is the great secret of the immense increment of population and propulsion given to all the movements and products of the world, since the *application of steam*. The increase of the *productive power* of man has been even ten-fold greater than the increase of his numbers; the one adding beyond calculation to the growth of the other—and here, in the construction of improved roads, and the use of improved machinery, we behold the true sources of that impetus to the growth of Massachusetts, which has enabled her, instead of continuing, as she had done for a century, behind North Carolina, the latter rather widening the gap between them, and with all the disadvantages and drawbacks of slavery in the old North State during the whole time, when, and only when, the people of the Bay State betook themselves heartily to the use of steam, and the application of improved machinery—to the construction of railroads, and the arts of manufacture—that moment she sprang forward, and now behold, she has not only gone by the old North State in population, but is fast shooting ahead, even of Virginia! In 1790, Massachusetts had but 378,719 inhabitants—while North Carolina had 393,751. The latter being ahead of the former only 16,000, while in thirty years after that, the "peculiar institution" being in full force during the whole time, Massachusetts had but 523,287—while North Carolina had gone up to 638,829—making between them a difference of 114,542 in favour of North Carolina! But how is it now, after the lapse of another thirty years, under the influence of the causes to which we have referred? Behold, Massachusetts has shot up to *very nearly* a million, or about 200,000 ahead of North Carolina, instead of being, as thirty years ago, more than 100,000 behind her! Some will say all this is the result of slavery. But did not slavery exist, just as it does now (with the exception of the melioration in progress everywhere), during the first equal period of thirty years, that she was leaving contracted, and agriculturally speaking, barren Massachusetts, every year further and further in her wake? No! If any man wishes to realize the true elements of their comparative progress, let him open a copy of Appleton's "*Traveller's Guide*," and see how railroads have been ramified from Boston over the whole of that and adjoining States, looking everywhere instinctively for what they create, the elements of wealth and population, as roots are said to have the faculty of searching for food!—all these roads, concentrating at her manufacturing villages, and her great seaport, as the spider concentrates at his residence the meshes of his web. Let him but behold in how little time, and for how little money, a man may fly over all New England, wherever he can turn a penny, living, in fact, for all the useful purposes of life, more in one year, than the man in North Carolina does in ten, wending his way at four miles an hour through forests of pitch-pine, singing as he goes—"free trade"—"free trade." Let us send to step-mother England for our cloth and our iron, and so starve out the d——d Yankees. Such is the cut-off-your-nose-to-spite-your-face-policy lately suggested by one of her most honourable and honoured sons, speaking in a very high place. Is it any wonder that at last that good old patriotic State has been so badly beaten in the race for excellence, by people who have the sagacity to see that diversification of employment gives to minutes the value of days; and that to promote improvement in everything, the great secret is, to *make a market on the land for the products of the land*. In a word that you must, by the all pervading and everywhere resistless power of self-interest, draw the loom and the anvil

close to the plough and the harrow—or, as Mr. Jefferson said, place the manufacturer by the side of the agriculturist!

Astor House, New York, *July* 9, 1850.

The Patent Impulsoria.—An ingenious means of applying animal power to the working of railways, so as to supersede the costly locomotive engine, has lately been invented in Italy, and exhibited experimentally upon the South-Western Railway. It consists in introducing the animals into a kind of coach, called impulsoria, by which they transmit their acting power to the leading wheels. This transmission is conveyed by very simple means, rendering useful both the driving power of the animals and their own weight The horse being thus introduced into the impulsoria, is placed upon a perfectly rectilinear, artificial ground, or platform, turning so easily that the animal, which is yoked to the shafts, when it walks does not itself advance; but, what amounts to the same thing, the platform itself is pushed backward. By this artificial ground platform, called by the patentee *pedivella*, is moved a tree, around with a pulley, from which, by means of a rope, the motion is conveyed to the axle-tree of the leading wheels. The varying proportions between the diameters of the pulleys give different degrees of speed. The horses are to be worked always at their usual pace, whilst the new locomotive will be able to run at any requisite speed, even at sixty miles an hour, without even altering the usual walking pace of the horses, which are inside the impulsoria as on the floor of a room, sheltered from the weather. The importance of introducing the horses into the carriage, in order to get more speed from the surplus of the acting power, had long been thought of; and the principle has been several times attempted, in England, France, and Italy; but hitherto without success. The new machine, whose inventor is Signor Clemente Masserano, from Pignerol, Piedmont, has been brought from Italy to England, and deposited at the Nine-Elms terminus of the South-Western Railway, where it may be seen working on the line. It has been made for two horses only, and they work it very well on the *pedivella*. More than thirty wagons have been already experimentally drawn by it up the very inclined line of the station. For working it up and down the station, a wagon is fastened to it, when it attains a speed of seven miles an hour. In the experiment to be made on the great line, it is expected to gain a speed of from fifteen to twenty miles an hour, and it is calculated that an engine of two horses more will run at a speed superior to that of a steam engine. The impulsoria runs either way, like the steam-engine; but the driving-horses do not change direction or movement. They can instantly be stopped, without dropping the machine; and the machine can likewise be stopped, while the horses continue to walk on the *pedivella*, without transmitting motion to the leading wheels. By the simple manner in which the horses exercise their moving power on the new machine, they can work easily the usual time (commonly about eight hours a day). During these eight hours, the impulsoria can run at least over thirty miles eight times; and as four horses do not cost much more than two shillings each per day, it would be an expense of eight shillings only, instead of £6 on account of coke only, the cost of which is sixpence each mile run. Such economy is of the utmost importance to the numerous interests engaged in the railways, subject to enormous working expenses. According to the statements by Dr. Lardner, in his valuable work on "Railway Economy," the locomotive power and stock absorb always more than half, and often four-fifths of all the working-expenses. But the principal advantage of the new machine will be to afford very cheap locomotive small branch lines, thus extending the advantage of the railway to localities hitherto impracticable from the expensive moving power. The directors of the South-Western Railway were the first to receive the propulsion on their line, where they have granted every facility to its ingenious inventor; for which courtesy he has especially to thank the engineer-in-chief of the locomotive department, Mr. Gooch, and his assistant, Mr. Trevethick.

A writer in Downing's Horticulturist very strongly recommends the refuse of a blacksmith's furnace as manure for pear trees, buried in as far as the roots extend, to the depth of seven inches. He says it was composed of cinders of the forge, fine scales of iron, iron filings, parings of hoofs, clinkers, charcoal dust, and the ashes of bituminous coal, the latter constituting about one-third of the whole.

The second year the trees grew a third more in height, than others in the same rows not dressed. The wood was stronger and the buds longer. In the third year the trees so dressed were "half as large again." The writer continues—"*Four* pear trees, to which I gave, by way of experiment, a peck of *leached* wood ashes each, at the same time with sweepings, have all along been decidedly the most vigorous of all, and have borne the finest fruit.

I follow the plan suggested some time ago in the Horticulturist, of keeping the trunks of my pear trees sheathed with straw all the year round; and, *since I have done so, have not been troubled with blight.*

PORTRAIT AND PEDIGREE OF A SHORT HORN HEIFER—PRINCESS III.

THIS number presents a portrait of a short horn heifer, Princess III., roan, "calved in 1848, in England, bred by Mr. John Stephenson, now the property of A. Stevens, got by Napier (6.238), dam Rose by Bellerophon (3.119), &c. She is full sister to Princess I.," bred and owned by the same parties. In 1849, Mr. Stephens selected in England and imported thence seven short horns, for J. M. Sherwood, J. F. Sheafe, and himself.

Their pedigrees are given at pages 450, 1, 2, and 3, of the *Transactions of the New York State Agricultural Society*, for 1849. The figures refer to the *Herd Book*, in which the bulls are registered and numbered. We can only make room to designate sire and dam of each, leaving the reader to turn either to the English *Herd Book* or to the "*Transactions.*" In the latter he will find, as connected with these pedigrees, a long account of "the ancient family of the Aislabies, which came into England from Normandy, with William the Conqueror," and which account goes back some 550 years, and reads more like the commencement of a biography or romance, or the trace of some old land title, than the pedigrees of cattle. But what follows will show the pertinent connection between the pedigrees of the men and women, and the bulls and cows.

"As early as 1600 the families of Aislabies was known to possess," says the legend before us, "a *most extraordinary tribe of cattle.* In the reign of Charles I., the then lord of the manor married the daughter and heir of Sir John Mallorie of Studley, in Yorkshire, and on the death of Sir John, the daughter, Mrs. Aislabie, succeeded to the ownership of the Studley estate. Mrs. Aislabie and her husband went to reside at Studley, while the younger branch of the Aislabie family continued to reside at Aislabie. Finally, in 1684, the younger branch of the Aislabie family parted with their estates in Durham. At the time Sir John Mallorie's daughter, Mrs. Aislabie, took possession of Studley, the cattle of Aislabie were in part transferred from Durham to Yorkshire, and the remainder in 1684."

And the said legend further relates how

"About 1700, a Miss Aislabie of Studley, married Mr. Millbank, of the Birmingham family of Birmingham, in Yorkshire, and through this marriage cattle from Studley went to Birmingham."

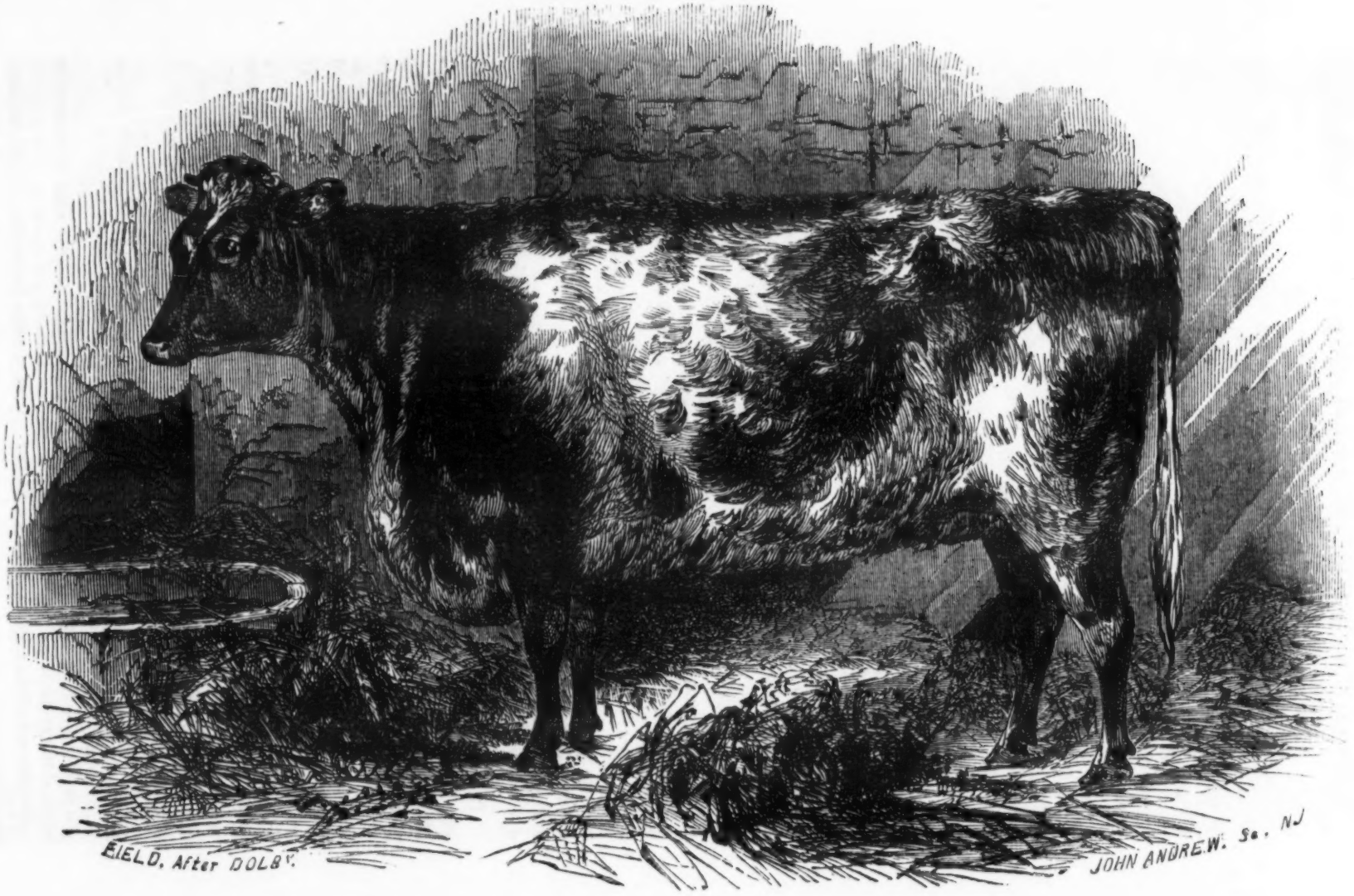
For further particulars the curious reader is referred to the "*Transactions*" aforesaid of the New York State Agricultural Society. Return we to the cattle purchased as aforesaid, and which it is not to be doubted are choice specimens of the purest blood. The portrait we give depicts a fine symmetrical form, if anything a shade too much tucked up, but the represented *length of the hair* is, we should think, as the French say, *un peut fort.* It seems to border rather too much on the curl of the shaggy, long-haired dog. The short horns are generally rather light in their covering, exposing them to suffer, perhaps, somewhat more than other cattle, from *wet* in winter, making good shelter for them more peculiarly necessary. The pile, however, is generally deficient rather in thickness than in length. Both length and softness of coat are points to be esteemed.

Cattle selected in the year 1849, in England, and imported thence for J. M. Sherwood, J. F. Sheafe, and himself, by A. Stevens, Esq.

RED ROSE 2D, red in colour; calved 1846; got by Napier (6.238); dam Tuberose by South Durham (5.281).

PRINCESS I., red; calved 1846 by Napier (6.238); dam Rose Ann by Bellerophon (3.119).

PRINCESS II., roan; calved 1848; by General Sale (8.099); dam Dutchess by W. Bates, 4th Duke of Cumberland (3.649).


FIELD. After DOLBY.
JOHN ANDREW. Sc. NJ

PRINCESS III., roan; calved 1848; full sister to Princess I.

RED ROSE, roan; calved 1848 by General Sale (8.099); dam Maid of Orleans, by Mameluke (2.258).

THIRD DUKE OF CAMBRIDGE (whose portrait we shall give); calved 1841 by Duke of Northumberland (1.940); dam Waterloo II., by Belvidere (1.706).

WATERLOO V., roan; calved 1841 by Duke of Northumberland (1.940); dam Waterloo III., by Norfolk (2.377).

We are further and kindly informed in a note, in the "*Transactions*" aforesaid, for the satisfaction of those who have the curiosity to learn, and the time to study it out (in connection with these individuals of the most distinguished families of short horns), that

"The history of the Aislabie family may be found in Hutchinson's, in McKenzie's, and in Surtee's History of Durham—and the history of the Mallories and the Aislabies in Yorkshire, in Bingham's History of Yorkshire; and the facts in reference to the Hutchinsons, from the papers of the late Doctor Stephenson, of Kelso, who was born at Ketton (so he was); and what relates to the Halls, from those of Alexander Hall, lately deceased."

England is a small country, not so large as some of our States—a country in which, while the thousands are starving, the income of the nobility is counted by hundreds and thousands of dollars per annum. These lords of manors may keep up herd books, and family trees, to register the pedigrees of their sons and daughters, and bulls and cows; but desirable as it might be here, to trace the blood of the latter, it is much to be doubted after all, whether the farmers of the United States can successfully aim at more than judging by the form, and handling; together with a knowledge of ancestry, for one or two generations. As to certain points of form, and true principles of breeding, every one should be instructed; and to that end we give an admirable essay from Sir John Sebright in this number; and intend to follow it with Surgeon Clines and others.* After all, the best means, with such plain guides as these essays supply, for the common farmer, is to select the best bulls and cows at his command, and *never to breed from inferior animals*, and above all, never tol et anything tempt him to pass off an inferior one, *without disclosing its known defects;* unless it be to the butcher for his knife, and who would not thank any one to tell him what his own more practised eye cannot discover.

In the same very ponderous volume of the "*Transactions*" of all the county societies, in which pretty much the same story is told from year to year, we find what we take to be the Report of a Committee on the subject of "Dairies," covering some fifteen pages, in which are brought together from various writings many old statements about the "Cramp cow, owned in Lewes, England," together with facts as to quantities of milk and butter obtained in New York Dairies, which must prove interesting to those who meet here with these writings and facts for the first time.

It is there stated, as to breeds—"The society has endeavored to ascertain the breed of cattle best adapted to the purposes of the dairy, but as yet, cannot learn from the competitors, that there can be *any decision as to particular breeds in this State, which are preferable.* From an examination of the statements of competitors at Syracuse, eleven in number, who referred to their cows, *nine* were of what is called the native breed, and *two* mixed more or less with Durhams or short horns. In the trial of *five* cows for thirty successive days, it will be seen Mr. Holbert's five cows in thirty days made, from 23d May to 21st June, 264½ pounds of butter, averaging over 1¾ pounds per day each. His cows were native with a slight mixture of Durham—what proportion is not stated. Mr. Nelson Van Ness, of Westfield, made 221 in thirty successive days, averaging nearly 1½ pounds each per day. His cows were stated to be of the common native breed. The only trial which has been made in this State with pure short horn cows as to their

* We have been compelled to postpone it.

dairy qualities, which has come to our knowledge, was made by George Vail, Esq. in 1844. He had six cows, from whose milk in thirty successive days he made 262 pounds 9 oz., averaging 43 pounds 12 oz. per cow—not quite 1½ pounds per day. One of the cows, whose milk was kept separate, made 52 pounds nine ounces, being 1¾ pounds per day."

Now, according to this statement it might be inferred, that the pure Durhams or short horns, were inferior as well to the cows only slightly sprinkled with Durham blood, as to those that were only of the common vulgar country breed, whose remotest ancestors were never honoured with a place in a Herd Book. But can anything be more fallacious than such tests unexplained, whether as the basis of private judgment, or of awarding State premiums? In the first place, Mr. Vail was restricted for his cows to his own limited herd of pure short horns, whereas Mr. Holbert and Mr. Van Ness had the whole "world before them where to choose." Mr. Vail had to take such cows as he had; whereas, these other gentlemen, following the dairy business, as a business, probably collected, with excellent judgment, the best cows to be had in their county. And, again, when the results come to be so near, who can say by how little difference in keep and management, it may have been determined? Nevertheless, to farmers generally, it ought to be a great amusement, as it is an imperious interest, to learn to judge of and select the best cattle within their reach and means, and lay themselves out to derive great satisfaction from establishing a stock of their own breeding and construction; just as yesterday we heard a gentleman—there can be no harm in saying, Mr. Schroeder of this place—felicitating himself, very justly, that all the various and beautiful trees and shrubbery that surround and shade and embellish his exquisite little cottage, were planted *by his own hand*.—EDIT. P. L. and A.

NEWPORT, *August* 6, 1850.

A LIVE STOCK INSURANCE COMPANY has lately been incorporated, somewhere in the West—we believe in Indiana.

It is for the interest that those so associated may be supposed to take in the subject, particularly, that we copy the following from one of the late English periodicals:—

"*Cattle Insurance.*—Mr. Samuel Cary Richards lately made the following judicious remarks on the subject of cattle insurance at the Yeovil Agricultural Meeting":—'This was a question of great importance to farmers and to landowners; it had already attracted much notice, but not by any means to the extent it deserved. All descriptions of like stock were now insured, as would be seen by a notice advertised in the "*Yeovil Times*" and other respectable newspapers; and to such an extent had this kind of insurance already been carried, in the office referred to, that the average, for the last three years, had been upwards of 50,000*l.* ($250,000) per week—the startling sum of 2,500,000*l.* per annum; and, to show its value to the farmer, it would be only necessary to state that the Insurance Company had paid, during the last year, for losses of stock, no less a sum than 70,000*l.* It appeared that there were, in England, Scotland, and Ireland 2,250,000 horses, of the total value of 67,000,000*l.*, of which more than 1,500,000 were used in agriculture, and that their value was 45,000,000*l.* The number of black cattle in the kingdom was about 14,000,000 to 15,000,000, of the value of 216,000,000*l.*; the number of sheep 50,000,000, whose value was estimated at 67,000,000*l.*; and the extent of capital invested in swine was still more extraordinary, when they reflected how little it was thought upon, or taken into account. The number of pigs, of all ages, breeding and rearing, was calculated to be upwards of 1,000,000, which, taking one-third at 2*l.* each, and the remainder at 10*s.* each, gave a value of 18,870,000*l.*, as the capital invested in pigs alone, making the total amount of capital in the above species of agricultural stock 346,270,000*l.* If to this was added the annual value of the crops, the capital in the hands of the farmers in the shape of live stock, and the products of the earth could not, at a moderate computation, be estimated at less than 600 millions of pounds! He thought it was unnecessary for him to say another word upon the importance of insuring stock.'"

ON THE ORIGIN OF THE MERINOS.

BY P. A. BROWNE.

In Hayden's "Dictionary of Dates," (p. 467), under the title "Sheep," it is stated that "they were impolitically exported from England to Spain in the eighth year of Edward the Fourth." In Anderson's "Chron. Deduc." &c. (which is quoted as authority for the above, p. 640), it is said that "in 1464 a league was made between Edward IV. and Henry V. of Castile and Leon, by which liberty 'was granted to transport certain live sheep from Cotswold Hills, in Gloucester; that they greatly increased in Spain, and that thence proceeded the fine Spanish wool.'"

Now, this account bears the stamp of error upon it, for the Cotswolds (or Cartswolds as they are sometimes called), belong to the species of *hairy* sheep, and could not have laid the foundation of the Spanish merino, which is a *woolly* sheep, and, to do Mr. Anderson justice, he admits that the story is *liable to exception*, because it seems to imply that, previously to that time, there were no sheep in Spain, which he acknowledges to be *a very improbable presumption;* and he might have quoted Strabo (as Livingston has done) to show that, even in the time of the Romans, beautiful woollen cloths were worn, made from *Spanish wool.*

It is true that Rapin tells the same tale of Edward IV. sending sheep to Spain, but *he* says they were sent to King John of Arragon. And Tindall's note upon the passage allows that there must have been sheep in Spain *before that time;* for as he says, and truly too, in the thirty-first year of the reign of Henry II. (who was crowned in 1154), the weavers of London were notified that, any cloth made of *Spanish* wool mixed with English, should be burned by the Lord Mayor! (See "Stowe," p. 419.)

The author of the History of "Ferdinand and Isabella" (in v. i. p. 55 of introd.) gives another version of this affair. He says that, "in 1394 (which was before the accession of Edward IV.) Catharine of Lancaster brought to the heir apparent of Castile, as part of her dowry, *a flock of English merinos*, distinguished at that time above those of all other countries, for the beauty and delicacy of the fleece." But the word *merinos* is derived from the Spanish word *mesdinos* (wandering), and was applied to the *Spanish* sheep on account of their *migrating*, and was never used in England to designate *any of the breeds of that Island*, which were all *stationary*. It was not till the reign of Henry VIII. that the Spanish sheep and this cognomen were taken to England *together*. That monarch obtained permission from Charles V. to import 3000 of the sheep of Spain, which were distributed throughout England.

If it were necessary we might add that Doctor Ure (in his "Philos. of Manuf.," published in London in 1835) devotes a dozen or more pages to general observations "on wool and its manufacture," from the time of the Egyptians to his day, wherein he particularly notices this important branch of industry in England, and he countenances no such claim. He says that, "in the middle ages *Spain* seems to have abounded in fine-wooled sheep *of the Tarentine breed, which it originally derived from its ancient Roman masters.*"* So far back as 1243 (which was 200 years before Edward IV. commenced his reign), the woollen cloth of Barcelona and Lerida is spoken of with admiration, as being in high esteem at the gay court of Seville in the reign of Peter the Cruel."

* See Plin. Secund. lib. viii. ch. 48. In corroboration it is mentioned in the Lond. Encyc., that the management of the flock *is peculiarly Roman.*

Mr. Youatt, in his essay upon sheep, not only acknowledges that the Cotswold fleece is long-wool (hair), but he says that in 1464 the celebrated present of Cotswold rams was sent by Edward IV. to Henry of Castile, and in 1468 another flock was shipped to John of Arragon, and they *were designed to improve the long-wooled breed of Spain, and never were mingled with the migratory flock from which the modern merinos have descended.* (See "Lib. of Usef. Knowl." p. 212.)

And so in Nicholson's "Dict. of Chem.," title "wool," it is stated that, "*lately*, the breed of merinos, or fine-wooled Spanish sheep, has been introduced into this country by his majesty, and found to retain its excellent qualities. It has also been crossed with *our own breeds* with advantage, so that we may *hope* to become *independent of Spain for fine wool.*" Wherefore, far from England having furnished the merino sheep to Spain, she has twice imported them from that country.

"FIAT JUSTICIA."

But where did the *Romans* obtain this breed of sheep? Columella, it is said, lived near Cadiz during the reign of the Emperor Claudius. Happening to be at Rome he saw some African rams exhibited at the Amphitheatre; he bought some and brought them to Spain, from which a beautiful breed was then formed. More than 1300 years after this time, Pedro IV. of Spain imported some more Barbary rams, and still subsequently by 200 years, Cardinal Ximenes made a third importation from the same place; so that it is not improbable that the merinos of Spain sprang from *Egyptian* ancestors.

TEXAS WOOL.

J. S. SKINNER, ESQ.

DEAR SIR:—I have measured the five samples of wool of Mr. Marsh, Independence, Washington county, Texas, which you sent me, and find them as follows:—

No. 1	1.1572	parts of an inch.
No. 2	1.1572	"
No. 3	1.1875	"
No. 4	1.1875	"
No. 5	1.1250	"

Yours, sincerely,

July 25th, 1850. P. A. BROWNE.

FLAX MADE TO RESEMBLE COTTON.—However much the following method may now admit of simplification, it is very interesting to see how much cotton was esteemed formerly in relative value, and how much skill and capital have had to do with its present general development. In the *Swedish Transactions*, for the year 1747, a method is given of preparing flax in such a manner as to resemble cotton in whiteness and softness, as well as in coherence. For this purpose a little sea-water is to be put into an iron pot or untinned copper kettle, and a mixture of equal parts of birch ashes and quicklime strewed upon it; a small bundle of flax is to be opened and spread upon the surface, and covered with more of the mixture, and the stratification continued till the vessel is sufficiently filled. The whole is then to be boiled with sea-water for ten hours, fresh quantities of water being occasionally supplied in proportion to the evaporation, that the matter may never become dry. The boiled flax is to be immediately washed in the sea by a little at a time, in a basket, with a smooth stick, at first while hot; and when grown cold enough to be borne by the hands, it must be well rubbed, washed with soap, laid to bleach, and turned and watered every day. Repetitions of the washing with soap expedite the bleaching; after which the flax is to be beat, and again well washed; when dry, it is to be worked and carded in the same manner as common cotton, and pressed between two boards for forty-eight hours. It is now fully prepared and fit for use. It loses in this process nearly one-half its weight, which is abundantly compensated by the improvement made in its quality.—*Mining Journal.*

ON WHEAT THRESHERS.

WHERE, as in this case, for example, and in questions arising as to the quality of wool, and other practical subjects, we are deficient in knowledge or the means of practical tests, we are but too happy to have it in our power and to be privileged to appeal to friends, who unite the disposition with the knowledge and the means to oblige us and our patrons. For the possession of such facilities we are, and feel that we have a right to be, both proud and grateful.

DEAR SIR—You wish to ascertain for a friend in Virginia, which is the best wheat threshing machine and horse power of the present day—and further, request me to give some views on the subject generally. I have devoted much attention to agricultural machinery for many years, and have ascertained many facts important for the farmer to know: but, to pronounce at once which is absolutely the best, is more than I can undertake to do. There are many good machines made after various patterns, which will do good work—provided they are faithfully and accurately made, and the cylinder be truly balanced. Most of the accidents which occur, and many result in the destruction of the machine itself—are caused by the carelessness of the manufacturer, and sometimes from defective materials superadded. A little paint covers many defects—and the high velocity put on the cylinders—say fifteen to sixteen hundred revolutions per minute, absolutely requires faithful work. So great is the competition, that various expedients are resorted to to make them cheap—maugre the wear and tear. Therefore, the cylinder is now made with too few acting points—an insufficient number of teeth—and this deficiency is made up, by propelling it at an immense velocity. It requires no argument to show, that the inevitable result must be the speedy destruction of the machine—in other words, that it will be soon used up. Much time is lost from the heating of the cylinder—true when first put to use, all will heat to some extent, and frequent stopping is necessary. It would be well, therefore, to subject the machine to some tests before commencing work. Have the cylinder taken out, and let a level be laid across, resting on the bottom of the lower boxes—if these boxes have been truly inserted in their places—the level will touch the boxes from side to side. This is a very important matter to avoid heating—and what is of more importance still, try the cylinder and see that it is perfectly balanced. The centrifugal force is vastly increased if one side of the cylinder is only one ounce heavier than its opposite—it causes much jarring and heating, increases the wear and tear, and therefore a new machine will soon be required. I will state a case in point:—some years ago, I purchased a machine in Baltimore (Pitts' patent). I asked the builder particularly, if the cylinder was accurately balanced: he assured me that it was. Well, the machine was taken home and carefully set up. I worked it with much caution for two days—never being absent from the barn, as I had some misgivings. During the second day, I happened to be standing near the centre of the barn-floor, and my attention was arrested by the extraordinary vibratory motion or jarring of the floor, the machine being in full action. I came to the conclusion at once that the cylinder could not be balanced, and accordingly took the cylinder to a shop the next morning. It was soon manifest that one side of the cylinder was a *pound and three-quarters too light.* Now, let us suppose that this machine had fallen to the lot of a farmer who pays no attention to these things—be it premised that it was a hollow cast-iron cylinder. What, most probably, would have been the result? A burst up before the crop was threshed out, and perhaps the death or maiming of one or more. Need I add the importance of setting up the machine truly and firmly—well braced—no jarring. If on a plank floor, it should be so supported from below, that there should be no spring—all should be solid and firm.

Having made these preliminary remarks, I come now to the choice of a machine.

I am best acquainted with those manufactured in Baltimore, and have little doubt that as good can be obtained there as elsewhere. Sinclair & Co.'s machine and power is used by many and much approved of—I have never seen this machine in operation. I have seen Drury's at cattle-shows—it looked admirably. It was conceded on all hands that both machine and horse-power were stronger and would be more durable than any hitherto seen. It was stated by gentlemen from Anne Arundel county, where a number were in use, that it was superior to all other machines—not liable to derangement, and very rapid and clean in operation.

Whitman's is a capital machine—he has announced an improvement in the teeth of his cylinder, and certainly this was the weak point. With this improvement properly carried out, for I have not seen it, I should pause in making a selection between the two. The teeth of his cylinder *were* too long, and drawn out too thin, and hence liable to bend and come in contact with the teeth in the concave, and moreover to wear out the sooner, a matter of much consequence to the farmer. I have little doubt that this objection has been obviated. Whitman has also a fan connected with his straw carrier—very beautiful to behold—and which cleans the wheat while threshing, and by the same power. I think there is wheat lost by the operation, although much labour is saved—but the variableness of the winds, and the consequent blowing back of the chaff, is a great objection. The fan may, however, be readily detached, and the straw-carrier perform its work, nevertheless. As to railway horse-powers, I have but little knowledge of them, and do not like the principle. I am a merciful man—the incessant strain on the back sinews of the horse standing on an inclined plane all day—aye, and for weeks—must be injurious to him. This power, however, has its advocates—I shall never test it.* But, the sweep power is not without objection—the walking in a circle all the time, and also the liability to gall. The moment, however, the machine stops, the animal is at ease—not so on the other power—the back sinews are not relieved from tension, during the many intervals which unavoidably occur during a day's threshing. The galling may be greatly mitigated, if not completely avoided—by using very long swingle-trees—such as are wholly unsuited for the corn-field: and every farmer ought to keep a set especially for the *sweeps*. I am indebted to George Page, that prince of mechanics, for this information, after having my mules and horses horribly galled for years. The name of Page recalls to my mind the fact—that he has made one of the best, if not the very best horse-power, that we have in our country. It may cost more money at first, but in the end it may prove the cheapest. Certainly the whole construction and arrangement are admirable. As regards his thresher I have no knowledge, having never seen one under any circumstances. There is one almost universal mistake—the band which drives the cylinder is usually from four to five inches wide only. There are usually six horses or mules attached to the sweeps—and there ought to be one inch of band in width, for every animal employed in propelling the machine—otherwise, the band will slip and power is lost. A band, therefore, should not be less than *six inches wide.*

I have endeavoured to comply with your request; it is a dull subject truly, and admits of no embellishment—but certainly it is one highly interesting to the farmer—and may guard some against imposition. It may also open the

* Passing lately on an Eastern railroad, a lady called our attention to a horse at work in this machine, sawing all the wood for the steam-engine.

eyes of a few, to some simple facts in machinery—"never dreamt of in their philosophy." I have been writing while the thermometer has been ranging at 90° in a cool place—and in a condition of body too, almost disqualifying me from thought or effort; I must claim indulgence, therefore, for negligence or omission.

WHAT HAVE FARMERS AND PLANTERS TO DO WITH EDUCATION, ARMIES, NAVIES, PEACE AND WAR, AND SUCH LIKE QUESTIONS AND THINGS?

THE perusal of the foregoing, on agricultural machines, prompts us to say that it would not be easy to specify any kind of knowledge more essential to farmers, and in which they are more deplorably and generally deficient, than the knowledge of the *principles, or philosophy of agricultural machinery,* to be supplied by familiarity with the higher branches of mathematics, and the very sort of knowledge most perfectly attained in the course of a *military education,* now bestowed at the cost of the planter and farmer, on the elect of the land, on whom, and on whom alone, are also bestowed life commissions, rations, quarters, transportation, ever increasing pay, pensions, &c.

Now, well persuaded as we are, that the cultivators of the soil will be ever ready in this, as in all countries, to bow and submit to the prestige of military eclat and power; and that they will never have the spirit to unite in demanding for the plough, at least as much of government instruction, as is given at their cost, to the sword; we would, as the next best and seemingly the only practicable mode of turning this military education to civil account—we say as the next best, and most practicable thing, we would humbly recommend that those military schools for army and navy be *very much multiplied.* We would have one at least, if not in every State, in all the four great divisions of the country. The course of education should be the same precisely as that at West Point, with the exception of *ploughing* instead of *shooting!* if we could have it so; but inasmuch as none are so much captivated and exhilarated as "*country* people" at the sight of fine regimentals, and the sound of the drum and fife, that substitution of the plough for the sword, we well know, is at present altogether hopeless. As the next best thing, then, that alone which public sentiment can, *at present,* be brought to sustain, we would greatly multiply these military schools. Let the drum beat and the fife play, and the cannon roar, to captivate the sovereign people; yes, we would thus educate thousands instead of tens; but we would do it as the best *substitute* (except railroads and canals) for fortifications, and armies, and navies, and when thousands are thus well educated at the expense of the planter and farmer, in branches of knowledge eminently useful in all civil employments, we would have them take their degrees and *be dismissed!* to go, like all other young men, to mingle and seek their fortune among the people, and ready in large numbers, in all the States, to discipline and take command of the militia, in the event of being forced into war, that greatest of all calamities, and when aggressive, that greatest of all national crimes.

The very act of graduation at a military school, proves the possession of precisely that kind, and that variety of attainments which qualify the graduate to make his way good, especially in a young, growing, and undeveloped country like ours; and to be at the same time eminently useful in the application and distribution of the knowledge thus conferred at the public expense. Put the graduate, for instance, on a farm, or in command of a ship, or a steamboat, or a factory of cloth, or of sugar, or starch, or soap; put him where you will in the employments of civil life, and his military instruction so called, and now given only to warlike purposes, will have qualified him to prosecute the industrial pursuit, whatever it may be, with the highest degree of intelli-

gence and power. For after all, look at the lines of study marked out on the programme of a military education. Does it not embrace close attention to everything essential to the highest success in the "dull pursuits of civil life?" A good hand-writing, a knowledge, that will stand the test of the strictest examination, in grammar, in arithmetic, in all the highest branches of mathematics, including practical surveying and civil engineering! in chemistry, in botany, in geology, and even in the French language. Yes, undoubtedly. And who does not believe, that for such a schooling, to be had altogether at the public expense, and for such a diploma, there would be thousands of candidates more than could be admitted, and even though (like all young men in civil life, educated at their own expense) they were to be, after graduation dismissed and sent throughout the States, with these high qualifications conferred by the public, to seek an honest livelihood?

Such, farmers and planters, if you must support military schools, is the civil account, for public benefit, to which they might be turned. On this plan, ceasing to maintain them as now you do all their lives, whether in active service or not, we should have all the channels of useful industry filled with men fitted to follow and push them to the highest degree of improvement. The farmer thus educated, could explain the principles of all agricultural implements and machinery, why a wagon should be made in this form, and a threshing machine in that; how to take levels and to irrigate land; how to construct gates, bridges, roads, and canals, &c. There would be, at least in every county, a farmer, and in our colleges and schools, instructors, capable of analyzing soils and manures, of characterizing grasses and plants—for all these are the very subjects with which his education (given now at your cost, only for military uses that may never be demanded) would make him familiar, and then, in case of war being *forced upon* us from abroad, which is not likely to happen (unless to give preponderance to some domestic faction in case of internal discord), the whole country would abound in men qualified to discipline the only army this country ought to have, *the militia of the United States.*

The same may be alleged of a nautical education, now conducted at the public expense, for the maintenance, in ships and palaces, of gentlemen commissioned for life, and pensioned afterwards, because forsooth we may some day have war! The most fruitful and frequent cause of war always has and ever will be, the *presence of armies and navies.* War relieves them from *ennui,* while it justifies the maintenance and gives active employment to forces that would otherwise rust for want of something to do. Does some poor exhausted nation owe us a few thousand dollars, we have nothing to do but to order a regiment of men, or a squadron of ships, that in years of idleness have cost us millions, to go and make a demonstration. A blow follows, and the blood of the nation is up, and millions on millions of debt is contracted, which the farmer and planter must pay, but in a manner (by borrowing) that as, poor easy soul, he does not know how or when, so he cares not about the amount, until at last his very substance is sweated out of him, to pay taxes, and salaries, and pensions, to the survivors and widows of "the glorious heroes who shed their blood for their country!" But who are to man our fortifications? Who to clear our frontiers of the Indians, says the advocate of ships and armies? In the first place *we need no fortifications.* As Lieut. Maury says, and as the venerable General Gaines demonstrated long ago, railroads to bring our interior forces to the defence of our exterior lines, are the best fortifications we can have; and as for the Indians, one-twentieth of the money expended in maintaining a military force would keep the poor wretches in submission, unless it be thought better to give them at once, the quietus of the bayonet in advance of the certain extermination that awaits them.

And now, says the reader, what has your journal to do with peace and war, armies and navies? Can any one at all familiar with the origin and objects of this work, require an answer to such a question? Have we not said, again and again, that our ambition is to tempt the cultivators of the soil to look a little beyond their noses, a little beyond the depth to plough, and the time to prune? We thank our stars in the belief that our intercourse is with an order of men who take pride in the godlike faculty of *thinking*. For the satisfaction of these, we would fain repeat *why* it is that we endeavour to show the connection between the condition of the farmer and the planter; and the subjects of education and taxes, and armies and navies, and peace and war; but for the present, for want of space, and with an aching head, we must conclude these hasty remarks, with a short quotation from a chapter yet to come, under the head of "Harmony of Interests, Agricultural, Manufacturing, and Commercial." It is the one in which Mr. Carey shows "HOW PROTECTION AFFECTS THE FRIENDS OF PEACE."

"The more spades and ploughs employed, the larger is the product of labour. The more perfectly peace is maintained, the greater is the number of persons who may employ themselves with spades and ploughs, the more rapid must be the increase of production, and the larger must be the reward of the labourer and the capitalist. The more swords and muskets employed, the smaller must be the return to labour. The more wars are made, the greater must be the number of persons employing swords and muskets, the slower must be the increase of production, and the smaller must be the reward to the labourer and the capitalist."

Let those who think there is no danger of any material increase of public expenditure, to which the cultivators of the soil, who are the real paymasters, should never be indifferent—let all such remember that during the administration of Col. Monroe, the expenses of this government averaged little over thirteen millions. Those of the administration of Mr. Adams, little over twelve millions; while for the year ending June 30th, 1850, our expenses were—

For war, ...	$12,798,976
" navy, ...	7,908,830
Total, ...	$20,707,806

enough, at $20,000 a mile, to connect by railroad every town in the United States, containing over 10,000 inhabitants—aye, enough to build a railroad from New Orleans to the Falls of St. Anthony. Have farmers and planters nothing to do with these items? But let us make one more extract from the "Harmony of Interests." We shall of course give the whole chapter when we come to it:

"England is now the great war-making power of the world. It is by means of the monopoly of machinery for the production of iron, and for the conversion of cotton into cloth, that she is enabled to tax the world for the maintenance of her fleets and armies,* for the prosecution of those wars. To destroy *her* power to make war would be to bring about universal peace. Protection to labour in other countries tends to limit her power to tax the farmers and planters of the world, and thus to limit her power to raise revenue for the payment of soldiers and sailors, while it tends to raise the value of man, and thus make soldiers and sailors more costly. In both ways it tends to diminish the power to maintain fleets and armies, and to promote the maintenance of peace.

* Sir Charles Napier has addressed a letter to the public, which fills five closely printed columns of the "Times," upon the subject of the navy and its expenses. The sum and substance of what he says seems to be, "that we have spent about ninety millions sterling [$450,000,000] during the last twenty-eight years in rebuilding our navy twice over, and now we cannot even find the fragments." Such are the results of the system of "ships, colonies, and commerce."

Every friend of peace is therefore bound to use his efforts for the destruction of *the monopoly system.*

"The London *Times* recently published, with approbation, a letter from the East Indies—from a British officer engaged in the battle of Goodjerat, from which the following is an extract. It is deserving the careful consideration of every man who has heretofore aided in the maintenance of the system:—

"'The enemy were in the sands trying to escape, and our men *knocking them over like dogs.* . . Some of our men screamed out, 'They are off!' Fordyce's troops went off at a gallop, our men giving them three cheers—such cheers—*it was a perfect scream of delight and eagerness!* and you may be sure I assisted and yelled till I was hoarse! . . . Every wounded Sikh was either shot or bayoneted (!!) . . I rushed up with a few of the grenadiers and found four men re-loading their pieces; three were bayoneted, *and I was hacking away at the head of the fourth,* when Compton, of the grenadiers, shot him. The last shot was fired at an unfortunate Goorer in the camp, who was seated quietly reading their Grunth! . . . We waited at this place about two hours; and I can assure you they were about the *jolliest two hours* I ever passed. I never enjoyed a bottle of beer so much in all my life!'"

HAY-MAKING IN ENGLAND.

NOTHING can give a better notion of the difference of climate between England and the United States than the following directions in a very late paper for hay-making in that country. If we had to bestow that much labour on ours—and yet more, if the English had the same climate that we have, with their pauper labour—men and women—they could undersell and supply us with pressed hay, as they do now with railroad iron:—

"*Hay-making.*—The best farmers put it through the following process. Suppose the *weather fine,* all the grass cut before noon, and in the afternoon of the preceding day, is very well shaken out by hand (not with a pitchfork), so that scarcely two straws together lie in the same direction. That part which was shaken out before 10 o'clock is turned over before dinner, and the remainder immediately after dinner. The whole is turned over again before 4 o'clock. Then before 7 o'clock (before any dew falls) the whole is made into foot coils with the rake and foot. After the dew is off next morning it is well shaken out again, with the hand, into plots; the intervals narrow, or wide, according to the weight of the crop. Then turned over before dinner, shaken out again after dinner, turned over again by 4 o'clock, then made into windrows of five or seven turnings each, and put into cocks of about one cwt. each. Next day shaken out and turned before dinner, and after dinner turned over again, being then made into large windrows, and carted to barn or stack; or, made into big cocks of five or six cwt. each, to be carted the first opportunity. Care is taken to cock up every night before the dew falls, which is of considerable importance in making good hay. Neither should the sun be allowed to burn one part by its lying undisturbed half or a whole day. By this mode hay is made in one or two days' less time than by a more careless manner of making. In showery weather the farmer has to be exceedingly watchful to see that it is always put into cock before rain. In other parts of the country far less care is taken in hay-making, but, I am quite satisfied, to the loss of the farmer."

NOISELESS CARRIAGE-WHEELS AND HORSE-SHOES.—In the *Mining Journal* of July 22, 1848, we noticed the introduction of some improvements in the construction of wheels for carriages, by Mr. Andrew Smith, the patentee of the wire-rope machinery, which were likely to prove of much value to the public, as not only adding greatly to comfort in travelling over paved streets, from their being perfectly noiseless, but from their combining a much greater degree of safety. The principle consists in forming the hoop or tire of two separate layers of galvanized iron, which are rivetted together, and re-galvanized in the mass; this division of parts cutting off all vibration when travelling over the roughest stones. Mr. Andrew Smith has also applied the principle to springs, in which each plate is galvanized separately, and can never rust. The axle is also made to fit the axle-box with perfect exactness, by a lining of fusible metal; is self-lubricating, and not liable to heat; the whole in conjunction secures a degree of quiet, ease, and safety hitherto unattained. We have been led again to notice these ingenious improvements, from the fact that the patentee having produced a noiseless carriage, found that the horses' feet made more noise than ever, and seeking for a remedy has applied the same principle to the horse-shoe. This is effected in the most simple manner, by making the shoes in two thicknesses of galvanized metal, the rivetting them together, and re-galvanizing. A horse equipped in these pumps trots over the granite streets of London as softly as if he was on a bowling-green.

REMARKS ON PISCICULTURE—OR THE CULTIVATION OF FISH AS A PRODUCT CONNECTED WITH AGRICULTURE.

I PROPOSE in the following sheets to offer a few remarks on a subject which has not, as yet, occupied the attention, to my knowledge, of the farmer and land owner in the United States.

It is well known, that in the palmy days of ancient Rome, the raising of fish for the table, and domestic use, was a very extensive branch of trade. And the piscinia, or fish ponds, in different parts of Italy are mentioned even by the Roman poets.

At present, scarcely any attempts are made even to protect the fisheries, with the exception, perhaps, of those of the oyster, from the depredations of men, and the effects of the growth of towns and cities, on neighbouring water-courses, which are the *wilds* where nature produces to our hands this very nourishing and palatable article of food.

The presence of a pool, in a garden or in the vicinity of the house, as a means of ornament, might be turned to good advantage in this respect, and fish of various kinds might be kept, which would add greatly to the health of a family, and might even be made a means of pecuniary profit.

There is perhaps no class of people, except the sea-faring men, who suffer so much from the want of a daily supply of fresh animal food, as the farmer. For the most part he depends for his fresh meat upon the occasional killing of a calf in the spring, a chicken in the summer, and of his beef or pork in the winter; but these are particular seasons when he is supplied with fresh meat, and do not occur daily. On the contrary, the greater part of the year is passed without it.

In addition to this, the variety of food so necessary to robust and proper health is not obtained, but long seasons are passed on a single article of diet; and as far as fresh fish are concerned, he generally depends, either upon a neighbouring city, or the occasional supply of amateur fishers.

It is quite evident that a regular supply of fish of a great variety of character, might be had by the poorest farmer, by a little attention to the matter, with the great advantage of being a very cheap diet.

No wealthy farmer, certainly, should be without the means of supplying his table with so necessary an article.

I would propose that ponds of running water, that is, ponds where water is continually supplied and going out at the same time, be the stream ever so small, be, in the first place, kept clean from all foreign substances. Stones, sticks, manure should be kept out of them. The cattle or pigs should not be allowed to go in them. They should be surrounded by grass, and some trees, and fenced with a proper fence, and even a rough stone wall might be constructed to protect them from freshets.

Such fish as trout, eels, catfish, sunfish, perch, rockfish, suckers, chubs, &c., should be introduced, and their habits carefully studied. The eel is a very good and agreeable food, and the mud of those ponds would, with the grass, worms, and vegetable matter, be the proper place and food for them. Men in Paris, where it will be admitted the people know something of good eating, have been known to accumulate large fortunes from their known skill in *cooking eels*.

The trout would flourish in ponds made just below or near springs, where the water was clear and cool, and the bottom stony and gravelly. A simple breastwork across a little stream from a spring-house, would make a pond that might at once afford shelter to fish, and supply neighbouring lands with water by means of little ditches cut into it for irrigation.

Catfish, sunfish, eels and suckers would live well in ponds with soft bot-

toms, and plenty of mud; and when this was not sufficient, to supply them with food and protection, the offals of the kitchen, stale bread, &c. would be eagerly devoured by them, and they would fatten fast.

When the fish were wanted for the table, a scoop-net, which a small boy could use, or a line and hook, or allowing the water of the pond to become low, so that the fish could be caught in other ways, would be necessary to get them.

After cultivating several kinds of fish for some time, the food best adapted to them would be known, and their habits would form a pleasant study for the younger members of the family, in the same way that they now study and understand the habits of the cattle, horses, sheep, dogs, &c., around them.

Should a large stream cross the land of a farmer, a considerable *dam* might be very easily constructed, and he might as regularly go to market with his fish in their season, as he does now with his calves, sheep, pigs, or chickens; with this great advantage, that the cost of raising them would be infinitely less, and the care of keeping, once the ponds and streams are well stocked with fish, almost nothing.

"People (says Mons. Coste, in the 'Comptes Rendus') exclusively occupied in fishing for eels, which are a great source of trade, on account of their abundance (in the Lac de Comachio), live, so to speak, on nothing else; and are very robust, and live longer than their neighbours who eat other meats. Where young persons among their neighbours become weak and consumptive, they are sent to these marshes, and partake of the fare and employment of the fishermen. It is, therefore, desirable that these fish should be cultivated to an extent to become the principal food of the people; but to attain this purpose certain conditions are necessary, which observation and science will point out sooner or later."

The same author says, that "every year about the month of March or April there is found at the mouths of all streams and rivers, in the evening, the strangest and most curious phenomenon possible to be conceived. Myriads of filiform transparent animalcules, from two to two and a half inches in length, rise up in compact masses, on the surface of the water, whose course is indicated by the dead bodies of the animals on neighbouring surfaces. In some countries the people arm themselves with long poles, on the end of which they attach a seive, with which they scoop up the fish attracted to them by torches. They dip these seives in the water, and after moving them about for a short time under the surface, they lift them up, loaded with a species of slime or living froth, which they place in hogsheads and bung up. This substance, when closely examined, is found to be composed of filiform animalculi, and is nothing less than young eels, migrating from the place of their birth to canals, lakes, and other streams, which communicate with the river whose course they follow. It is to these *swarmings* that we are indebted for our supply of eels in all the localities where they are found, notwithstanding the great mortality which must necessarily exist, from the exposed condition of these young eels. These might by any farmer be transported to a proper location prepared for them, and he could thus annually, if necessary, supply his *eeleries* with a new stock."

The same author states that he found these young eels grew in seven months, from one inch to one and a third inches in length, and four lines in circumference, to four inches long and nearly an inch in circumference. And this in a confined space, far from their native streams. At twenty-eight months they were eleven inches long, and two and a third in circumference. These eels were poorly fed, and would probably grow much faster if well fed and in good circumstances. A calculation might easily be made as to the rapidity of the growth of these creatures, and experiment has also been re-

sorted to to test the matter. An eel three years and a half old measured fifteen inches in length, and four in circumference. Another weighed, at seven years of age, four pounds.

This rapid growth of the eel will point it out at once as a profitable creature for culture; perhaps more so than any other fish.

The next question is, what are the conditions necessary to the cultivation of eels? And what is the best mode of proceeding in the matter? After the few general remarks made above, with the plain practical sense of the farmer, I doubt not but almost any of them might arrange ponds and brooks in a way to cultivate both eels and other fish, with little or no expense, and with great profit in money and health to himself and family. It is to be hoped that this creature will attract the attention of some of the intelligent of both farmers and others, and command that attention which it really deserves.

Since writing the above, I have visited the western part of New York, and several other parts of the Union, where agriculture is conducted in an improved manner.

In the county of Ontario, N. Y., I found the plan of a fish pond very commonly adopted. Its varied uses may best, perhaps, be learned by a description of one, two, or three, which I there visited. The farm of Gideon Lee, which lies about a mile west of Seneca Lake, on the second of two or three ridges which run north and south parallel to this lake, is a large one, and he has constructed a pond which accomplishes several purposes.

On the side of a slope covered with marshy ground, he has thrown a breastwork across, to the extent of about one hundred yards. This forms a pond of from one to one hundred and fifty yards square, and about nine feet deep. Some three or four small spring streams pour their waters into it. It has several trees around it, but is not very much shaded with tress. The ground below the pond, to the extent of some six acres, is nearly reclaimed, having been previously too wet to cultivate, and doubtless the source of malaria, and consequently of intermittent fevers. The water of the pond is conducted off to the southern part of the hill, and lower down, through an underground pipe which throws it on several wheels which move a *grist-mill.*

The fish in the pond are chiefly *trout,* some seventeen of which, according to the statement of Mr. Lee, junior, were placed in the pond about seven years ago. Since that time, at least two thousand large-sized and well-flavoured fish have been taken from the pond, without any cost to the family. The table can, in fact, be supplied at any time, with any number of these delicious fish. A grass grows in the pond through which the fish make by-ways, and highways, and in which they seem to take great delight. This, probably, is the means by which they cleanse their surfaces of the secretions taking place continually. The meat of the fish is said to partake very much of the pleasant flavour of this grass.

The farm is well supplied with ice from this pond, and Geneva, which stands about a mile off, is also supplied with fine spring water. The pond is not used as a watering place for the cattle, as is the case on some other farms which I visited.

Mr. Harris' farm, which lies a little north of Mr. Lee's, also contains a small pond, which is constructed in the same way at almost *no* cost, as the work was done when the men on the farm had nothing else to do. This pond is supplied by a small stream, and contains pike and other fish, which have been placed in it. A moderate supply of fish can, at any time, be obtained from this pond. Some sixty tons of ice can be obtained from it in the winter time, and the children and hands occasionally bathe in it in the sum-

mer. The same stream which supplies it is used to water the cattle when they are in the vicinity.

Mr. Jno. Delafield, formerly a distinguished banker in the city of New York, has on the east side of Seneca Lake, what is considered a model farm, and obtained the prize for the best conducted farm in the State of New York. In a very interesting conversation which I had with him, I learned many facts, both in connection with the use of ponds, and other matters connected with farming. He has a pond which covers about an acre of ground, and constructed in the usual way. An embankment thrown across between two ridges, cuts off small spring streams, dries the land below, and forms a pond which is used for, at least, four purposes.

Good fish are cultivated in it, and a good supply of them can be had for the table. Mr. D. informed me that he always had fish *once a week, and frequently twice a week, for his hands.*

It does to water the cattle and sheep, and also for them to bathe in.

A sheep-fold near, and the statement of Mr. D. himself assured us that it was used to wash sheep in in the spring of the year, previous to shearing. This, in fact, was the business on hand when we visited him—the men were shearing the sheep.

In the winter time it supplies the farm and vicinity with ice.

It may seem strange that Geneva, and the neighbouring farms should depend upon these ponds for ice; but it will not seem so when it is recollected that the Seneca Lake, which is about forty miles long, and two to three miles wide, *never freezes.* It is a spring lake.

Dr. Spence, who resides near the head of Seneca Lake, informed me that he has a pond of about an acre in extent, which he first formed merely as a bathing place for his family and men. This he now uses as a fish-pond, of which he says he has a full supply, and as an ice pond. The fish which he now has are pike, eels, and catfish. He says the trout cannot be kept where the pike are, because the latter destroy them, and many other fish, in a short time.

The ponds in other parts of western New York are used chiefly as places to wash the sheep, of which the farmers raise a large number.

I would suggest, however, to those farmers that the sheep need not be placed *in* the pond, but a small enclosure might be dug out, and boarded round on the lower side of the pond, where the stream from the pond might be made to fall upon the sheep; and where the water might be just deep enough to cover the back of the animal. They would thus save their fish-ponds from the disturbances necessary to washing several hundred sheep; for those who have no ponds have to send their sheep to those who have, to have them washed.

In conclusion, Mr. Editor, I have only to say, that the subject is not yet exhausted, but might be drawn out in a variety of other relations, to the well-being of the farmer. But having only for my object the supply of good fish, for the table of the farmer, I think I have shown that it can be done with *no* expense after the first construction of a pond.

JAMES BRYAN, M. D.,

Professor of Institutes and Medical Jurisprudence, in Philadelphia College of Medicine.

We have rarely had the satisfaction to publish anything more worthy of note, than the preceding essay. How easy would it be for thousands in the interior to turn its suggestions to practical account. The chub-fish makes a good tenant of the fish pond.—*Edit. P. L. & A.*

THE ROCKY MOUNTAIN GOAT RECOMMENDED TO BE DOMESTICATED AND ADDED TO OUR WOOL-BEARING ANIMALS.

THE examination and description of the pile of the Mazama (Raf:) Americana, the Rocky Mountain Goat of Harlan and Schintz.

Specimens presented by Professor Samuel S. Haldeman.

This pile is of two kinds, one longer and coarser than the other.

The general appearance of the first is of lamb's hair—of the second, of the under coat of the poodle dog.

The first is in length about four inches, but it appears to have been *cut*, not drawn out of the skin of the animal. Shape, eccentrically elliptical,

depressed in the centre, tapering from the inferior to the superior extremities. The diameters of four filaments, taken in three places of each:

No. 1.	$\frac{1}{237}$	by	$\frac{1}{416}$	$\frac{1}{281}$	by	$\frac{1}{500}$	$\frac{1}{207}$	by	$\frac{1}{362}$	of an inch.	
2.	$\frac{1}{237}$	"	$\frac{1}{731}$	$\frac{1}{281}$	"	$\frac{1}{625}$	$\frac{1}{266}$	"	$\frac{1}{1250}$	"	
3.	$\frac{1}{237}$	"	$\frac{1}{625}$	$\frac{1}{281}$	"	$\frac{1}{625}$	$\frac{1}{266}$	"	$\frac{1}{1250}$	"	
4.	$\frac{1}{250}$	"	$\frac{1}{625}$	$\frac{1}{206}$	"	$\frac{1}{562}$	$\frac{1}{264}$	"	$\frac{1}{500}$	"	

Color white; direction straight, but undulated; ductility, elasticity and tenacity:

With 170 grains one inch, stretched $\frac{3}{90}$ths of an inch, elasticity entire.
220 " " " " $\frac{7}{90}$ " " "
270 " " " " $\frac{12}{90}$ " minus $\frac{3}{90}$
320 " " " broke.

Fracture abrupt; shaft composed of three parts, viz: 1st, A cortex which is white and too thin to be measured. 2d, A black, fibrous band, of the thickness of $\frac{1}{1250}$ of an inch. 3d, A white opaque, granular centre, which has a fleecy appearance. Apex sometimes abrupt, but mostly pointed: none furcated. Transverse sections or disks exhibit plainly, the shape and three parts above enumerated.

When a filament is crushed, the fibres readily separate. They have a diameter of $\frac{1}{650}$ of an inch, but may be divided into fibrils of from $\frac{1}{2500}$ to $\frac{1}{5000}$ of an inch. The central matter, which oozes out from the interior, is white, opaque, and granular; the grains of an irregular and heterogeneous shape; the smallest less than the $\frac{1}{10,000}$ of an inch.

The small pile.—Length $1\frac{6}{140}$ inch, shape oval, diameter from $\frac{1}{1572}$ to $\frac{1}{1875}$ of an inch. The shaft consists of three parts, like the first described, but the cortex is comparatively thicker. It is undulated and slightly frizzled; no furcations.

Ductility, elasticity, and tenacity.

With 12 grs., one inch parted with its undulations and elongated $\frac{2}{90}$ths of an inch.

With 25 grs. one inch stretched $\frac{3}{90}$ths, elasticity entire.
35 " " " " 4 " "
45 " " " " 8 minus $\frac{1}{90}$th of an inch.
55 " " " " 14 " 5 "
65 " " " " 20 " 8 "
75 " " " " 26 " 13 "
85 " " " broke.

Scales upon the cortex 3500 upon one inch of length.

Remarks:—From the eccentrically elliptical shape of the long kind, it ought to be crisped and frizzled; the cause of the deviation is, probably, the *peculiar shape*, being thicker at the two extremities and thinner in the centre of the ellipse. Its deficiency in strength is, doubtless, owing to the small quantity of fibre, in comparison with the granular matter of the centre. The hair of His Excellency, General George Washington, with a diameter of $\frac{1}{312}$ by $\frac{1}{500}$, broke with a weight of 1120 grains only, this with 320!

The small pile is fine and strong, and has a large number of scales on the cortex; wherefore, we would think that the Mazama might prove a valuable addition to the fleece-producing animals now domesticated. The pile would probably improve by the care and attention that our farmers would bestow upon the animal.

P. A. BROWNE.

THE WHEAT FLY.

We take great pleasure in giving a place in our journal to the following interesting letter from the talented Miss M. H. Morris to P. A. Browne, Esq., upon the wheat fly:—

Dear Sir:—If I mistake not, the wheat insect which you so kindly sent, will prove to be the Cecidomyia tritici, that pest that has for so many years ravaged the wheat fields of Canada, Maine, New York, New Hampshire, and Massachusetts, but has never until now, been observed in our State. It is needless for me to enter into its history, as volumes have been already written describing it in all its forms. A notice of its appearance here I think important, as some means may be taken to prevent its spreading; or if no good end be answered, it will be a curious state in its history.

The fly is not yet developed, and if it be the Tritici, it will not be likely to appear until the middle of next June, when the grain will be in the milky state—at least such is its out door history; but what it may do, shut up in a box or bottle, is more than I will even conjecture. These are the first that I have ever seen in their larvæ and pupæ state. but they agree so closely with the description of the C. tritici in Harris' work on insects, that I have little hesitation in naming them.

I have long wished to procure them, and am most grateful to you for the valuable contribution to my collection. Yours respectfully,

M. H. MORRIS.

To P. A. Browne, Esq.,
Germantown, 14*th August*, 1850.

Extract of a letter from Prof. S. S. Haldeman to P. A. Browne, upon the wheat fly.

Columbia, Pa., 9th August 1850.

My dear Friend,

"I am much obliged to you for the infected head of wheat. The orange colored objects between the layers have been kept for nearly a month without producing anything. I have never met with the *Cecidomyia tritici* of Kirby, but am very confident that these pupæ belong to it. They are not enclosed in a hard follicle resembling flaxseed, like the *C. destructor* or *Hessian fly*.

You have consequently *three* species of these destructive flies in the vicinity of Philadelphia, namely:

1 *C. destructor, Say*, the Hessian fly.
2 *C. tritici, Kirby*, the wheat fly.
3 *C. culmicola, Morris*, the straw fly.

The first is found between the base of the leaf and the culm or stem; the second in the head; and the third within the culm. My *C. robiniae*, in conjunction with *odontota scutellaris*, have destroyed the foliage of nearly all the locust trees in this vicinity. I have found *C. robiniae* as far as the State of Mississippi.

Respectfully yours, S. S. HALDEMAN.

PEAT CHARCOAL MANURE.

To the Editor of the "Mark Lane Express."

SIR—You challenged me to give public proof that *peat charcoal* possessed the power of deodorizing excretory matter, the admixture to produce "*an inoffensive manure capable of being transported by any conveyance, and of being used with the drill.*"

I met the challenge; and in your paper of Oct. 8, 1849, you obligingly stated that I had "fairly won the thanks and honour of my fellow men."

Permit me to say I now challenge you.

Your position gives you the power of having tested, in a manner perhaps beyond the reach of others, the real value of this combination as a manure. Neither you nor the world will, nor perhaps should, believe my *individual* statement, that "*peat charcoal manure*" is the most valuable that has yet been produced. Still, I AVER THAT IT IS, and I seek for proof to the contrary.

I now place at your disposal 12 sacks (3 cwt. each) of this manure.

The charcoal to produce this combination has been manufactured under my direction for "THE IRISH AMELIORATION SOCIETY," the admixture made in London: 6 sacks contain equal parts in weight of *general excretory matter* and charcoal, the remaining 6 equal parts of peat charcoal and urine.

Pray place this in the hands of six different persons to test each kind against guano or any other manure they please.

First, I seek comparison for one season; next, that the test be extended to THREE or even FOUR withoul renewal.

I feel assured you will select those of eminence in agriculture who will take the trouble of making the test fairly, and who will fully report results.

I have the honour to be, Sir,
Your faithful servant,
JASPER W. ROGERS.

We have on hand some very valuable information on the subject of *peat charcoal* as a manure, which will doubtless be very acceptable in regions productive of peat. We believe it is destined to be esteemed one of the most valuable resources for the farmer ever yet discovered, and can promise some illustrations highly interesting in support of this impression; all we want is *opportunity and space* to bring them out.—*Edit. P. L. & A.*

GUANO.—As a great deal of interest is felt at this time, by farmers and planters, relative to the probable supply and price of this article, for their fall use, we deem it our duty to endeavour to keep them advised upon the subject, as far as our means of information will permit. In our last, we mentioned that five vessels were expected from the Coast of Peru before the 1st of October. Three of these have since arrived, viz.: 1st. The J. G. Coster, with 500 tons, one-half of which was landed at New York, and the other half was received at this port. 2d. The Kirkland, at this port, with 400 tons, 200 of which were landed here, and 200 tons sent to Washington, D. C. 3d. The Jane Parker, arrived at this port, but her whole cargo was sent to Alexandria. The 4th, with 300 tons, will arrive at this port about the 1st Sept., and the 5th, the Persian, is expected early in this month (Aug.) with 700 tons, 100 of which will be landed here, 150 at Petersburg, and the balance of the cargo at Richmond, Va. These, we are induced to believe, are the only vessels which will be likely to reach the United States before the 1st of Oct., without an extraordinary good voyage is made.

Price of Peruvian, $47 and 48 per short ton.—*American Farmer.*

P. S.—Since the above was published, the price of Guano has risen in the Baltimore market. Doctor Davis went there about the middle of August, with a friend from the neighbourhood of Dover, Del., and offered to take 70 tons, and to give $50, but could not engage it for less than $55 the short ton, that is 2000 pounds.

THE NEXT EXHIBITION OF THE CHARITABLE MECHANICS' ASSOCIATION is to come off at Faneuil Hall, Boston, on the 20th of this month. The Editor of *"The Plough, the Loom, and the Anvil,"* has been honoured with, and has accepted an invitation to deliver the Annual Address on the occasion.

It would be a fearful undertaking for men of small stature to tread where such as Governor Everett, and other distinguished sons of the old Bay State, have gone before; for in the march of intellect, such men take giant strides, and nothing could reconcile us to follow publicly in their wake, but that now, after their learning and eloquence have explained the philosophy, and culled and wreathed all the flowers of imagination that belong to the subject, a sedate and thoughtful people may be the better content, with an humble essay to make some plain suggestions for the improvement of the mechanic arts and *useful industries of the country.* For that cause it has been our inclination, not to say instinct, to labour all our life; and now that we are in the "down hill" of it, we are contributing to it more than $4000 annually—the hard earnings of personal industry—leaving it to those who regard the labour of the country as a *national concern*, to say how far our effort shall succeed, through the agency of a journal which is spreading its doctrines from Nova Scotia to California; and which, for that great end, we would distribute gratuitously if we could afford it. But it is no more than fair—to which we trust none will object—here to proclaim, that it is not until the expenses above-named have been *met and paid*, that anything remains for the editor. Would our patrons but *show* their numbers to their neighbours, we would be content to abide the result; but one great obstacle to its success is, in spreading a knowledge of the *existence and the nature of a new work like this!* How different is the case with journals depending on town support and supporting town interests! In strict reference alone to the communication of his able correspondents, the editor does not hesitate to say, that there is not a friend of American industry and development in the Union, who, if he *will read it*, will not be repaid for his outlay in a *single number* of "The Plough, the Loom, and the Anvil"—nor is there one such, who ought not to feel himself, in some sort, under an obligation, as Governor Trimble of Ohio, and many others have said *and done;*—to *interest himself in extending its circulation!*

As to these great Annual Exhibitions of the Mechanic Arts at Boston, we doubt not the truth of the declaration, in a report of the Committee on Agricultural Implements at their fifth celebration, wherein they say—

"There has never been made in this Commonwealth, any effort for the "promotion of the Mechanic Arts, which has been so beneficial, and successful "in glorious results, as the Exhibitions which THIS ASSOCIATION have so "patriotically established and ably conducted."

We have only room to add, that we shall preserve on our pages the report of the Committee on *Agricultural Implements* at this next Exhibition; and in the meantime wish it every success, commensurate with its laudable designs and objects.

FREE TRADE.—As exemplifying our present tariff policy, it is worthy of being remarked that the importations into this country for the year ending 30th June, 1850, will amount to upwards of $200,000,000, while it is doubtful whether our exports will reach within $50,000,000 of that sum. Such has been the excess of imports over exports, that, notwithstanding the large amount of our National, State, and Railroad stocks which has gone abroad, specie is now being exported in addition. So the system works, and will work, until it is changed, or the nation rendered bankrupt.

Never mind! Let us still go on, says the free trade advocate, to sell in the highest and buy in the lowest market, be that where it may. Ah, we are a great nation, worthy to be called the—*great humbugged!*

For "The Plough, the Loom, and the Anvil."

HORTICULTURAL MEMORANDA FOR SEPTEMBER.

Every month of the year has its peculiar interest to those who are engaged in horticultural and agricultural pursuits. The current month, with many, is considered comparatively one of leisure. There are, however, several imperative duties to be performed; for, if neglected, the benefits of the garden for the next six months would be measurably lost.

In the early part of the month sow *early Dutch cauliflower* on a very rich piece of soil, to produce plants to be planted into cold pits or frames, either to grow permanently or to protect only from severe cold till they are planted out early next spring to head in the open ground. Manure the ground well, dig it deep, break the soil fine, and sow therein, raking in the seed evenly and gently, press the soil (after raking) with the back of the spade. If the weather is dry give occasional waterings. The plants will appear in eight days. If they are attacked with the black beetle dust them in the mornings with air-slacked lime, plaster, or wood ashes.

About the 12th to the 25th sow *early York cabbage* seed, to produce plants for Spring planting or to plant out in October where they are intended to head; also *early Dutch or butter lettuce*, the white *butter* head for the Southern States, the *green butter* head for the Middle States. In the Northern States they must be *boxed* or, in other words, put into cold frames, where they will be protected with sash or shutters, or both, according to the severity of climate. Sow *corn salad* in drills half an inch deep and nine inches wide. The *broad leaved* is the best variety for cutting during Winter and early Spring. Sow *coleworts* early in the month in the Southern States to plant out in November to produce small cabbages in Winter and early Spring.

Select the largest and best formed *onions* to plant out for seed. One hundred roots will give one pound of seed. Plant them nine inches apart and eighteen inches from row to row. Sow a few *black winter radish.*

Sow *round leaved spinage*, for an early Winter supply, in rows one foot apart. When the plants are up thin them out from four to six inches from plant to plant. Thin out turnips from six to eight inches apart. Hoe them deep and keep them clear of weeds. If in the field use the cultivator freely. Swedes' should be ten to twelve inches apart. Make new plantations of rhubarb in very deep, rich ground, strongly manured. The old roots can be divided into six or eight pieces, and planted with their crowns three inches under ground. The *early red* and *Victoria* are the two best, the former for its earliness, and the latter for its size. One stalk, if extra well-grown, will weigh two pounds, and be fully three feet long. For pies, preserves, and jellies, the rhubarb has become a very popular plant. Cover the bed during Winter with four to six inches of manure.

Where there are fruit trees to be planted this fall, *now is the time to prepare the ground thoroughly*, by trenching and manuring. It is astonishing to see the difference of the growth of trees on ground properly prepared from those planted in the ordinary soil. As a manure, any well decomposed vegetable matter, of whatever description, is suitable. Half a peck of leached wood ashes to each tree, properly incorporated with the soil, is an excellent stimulant for the growth of the pear and the apple. Among the multiplicity of names of fruits published by authors and nurserymen, it is a very dubious task to make a selection—not over one in ten of them being worth culture for quality or market purposes. We give a selection of a few kinds that will not fail to be acceptable if even treated with mediocrity.

Apples.—Early Bevan, Early Strawberry, Early Harvest, Bough, Summer Pearmain, Rambo, Fall Pippin, Winter Pearmain, Bellflower, Gravenstein, Spitzenburg, Baldwin, Rhode Island Greening, Newton Pippin, and Roxbury Russett. These will be in eating from July to June of the next year and mature in or nearly in the order they are named. Trees budded or grafted on seedlings should have the preference. Have the roots very carefully lifted, and do not allow them to be exposed to the sun in time of removal.

Pears.—Madeline, Bloodgood, Tyson, Flemish Beauty (should be gathered from the tree before it is fully ripe and keep it a few days before eating), Rostiezer, Washington, Bartlett Seckel, White Doyenne, Duchess de Angouleme, Louis Bon de Jersey, Kingsessing, Beune de Aremberg, Vicar of Wakefield, Lawrence, Passe Colmar, and Winter Beune.

These will be in eating from July to April, and will mature in nearly the above rotation. We consider that pears generally are preferable on the quince stock. They come earlier into bearing, are not so subject to disease, and require less room to grow, and they will on the same space of ground produce as much fruit. In the above list, the Washington and Seckel pears are best of the pear stock. The importance of a

copious supply of fruit for home use or that of sale is every year more evident. The culture of pears being now so well understood that the sorts will generally produce fruit, if on the quince, the third or fourth year from the bud, and in less than five years they will pay the cost and yield a profit, if carefully collected and sold in any market of the United States.

The Editor of "The Plough, the Loom, and the Anvil," will be much obliged to any friend who will give him a plain, clear essay on root-grafting the pear and other fruit, manner and time of performance, objects to be attained by it, &c. The management of the pear, in the South and the North, is believed to be as different as possible. In the South, a pear tree is left to attain great height and size, does not, we believe, bear for many years after being planted, and is considered to be very precarious and difficult to be raised, and withal an uncertain bearer, and a short-lived tree; yet there are *some* very old trees, planted by the *ancestors* of the present generation. The best pear, except perhaps the Seckel, that we remember to have eaten, was that of a single tree growing in our grandmother's garden *fifty years ago.* It was a rather small, or perhaps middle-sized, bell-shaped, very juicy, sweet, and high-flavoured pear, brown on one side and pale green on the other. The Editor remembers several fruits, particularly apples, in her orchards, of a delicious sort that he has never met with elsewhere. But she was a woman *with a mind and character of her own!* illustrating in her life and maxims some of the noblest virtues. Query, if there be any falling off in the males of the present day, is there not yet more in the females? Was there or was there not something in the times and requirements of the Revolutionary period that brought up the character of our ancestors to a high pitch, from which, under the enervating influences of national security, ease, and luxury, we have fallen back a peg or two? We only ask for information.

We should be grateful for a brief essay on the culture of the pear from some member of the Massachusetts Horticultural Society—what says Colonel Wilder, or General Dearborn, or Mr. Walker, or Horace Dodge?—What height does the grafted pear attain there, what distance planted, and what is considered a fair quantity from a tree? Answers to these will surprise our Southern friends, or we are mistaken!—*Editor P. L. and A.*

FINE WOOL AND FINE MUTTON GO TOGETHER.

PHILADA., 13*th August*, 1850.

DEAR SIR—You seemed, in our conversation this morning, to think that I contended too much for the wool without regarding the mutton, and did not appear to appreciate my answer, that in the care and attention required to produce fine wool good mutton would necessarily be produced. I did not expect so soon to send you the highest authority for my opinion, but turning over the leaves of the book you loaned me, I find the following passage of Mr. Elman: "It is the opinion of many that sheep which produce fine wool are finer and better in the meat than those of coarse fleeces, and this I think is borne out by the fact of fine wooled sheep selling at better prices per pound in the market, on account of their mutton giving greater satisfaction to the customers."

Yours, truly,

J. S. SKINNER, Esq. P. A. BROWNE.

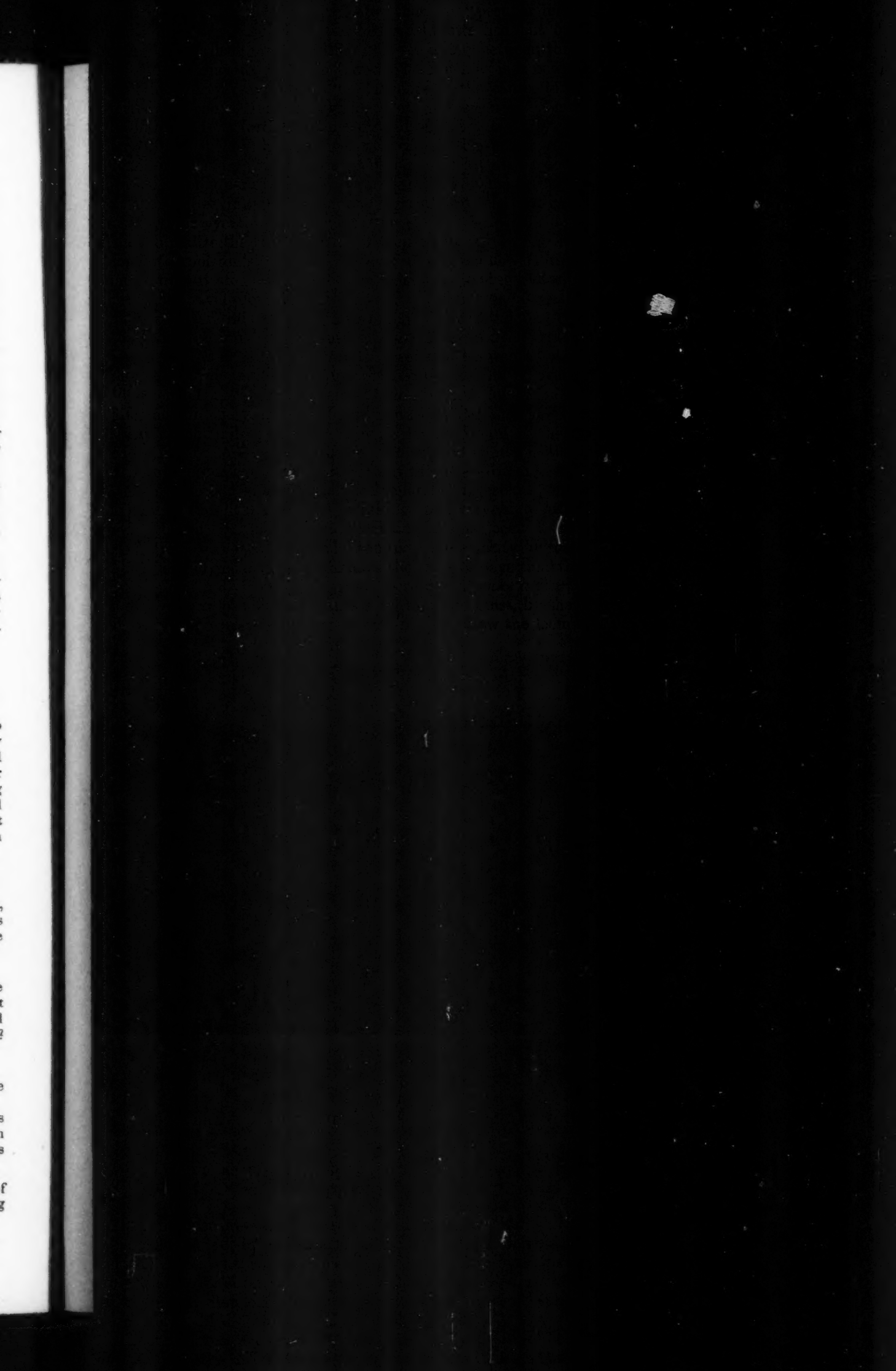
We are aware that, according to the common observation of gentlemen in the country, made when merinos were first introduced in this part of the country, at great cost, a cross upon the merino was thought to give mutton of finer grain and better quality for nice judges.—*Ed. P. L. & A.*

☞ It is stated in the *Pittsburgh Ledger*, that all the cotton factories in Allegheny have suspended operations in consequence of the glutted state of the market. This turns about 800 persons out of employment.* How much of the forty millions of revenue collected under the tariff of '46 will it take to repair this great loss to the poor and to the country? —*Butler Democrat.*

THE OLD AMERICAN FARMER has mounted another high feather in its cap, by the engagement of Edmund Ruffin as a regular contributor to its pages.

We have always regarded and spoken of Mr. Ruffin as among the ablest contributors to the cause of agricultural improvement that we have ever known—far more so than some who have run after popularity, while he has left popularity to follow—careless whether it did or no.

* And sends them to raising agricultural produce, as the rival of the farmers, instead of buying it, as their customers, at once increasing the quantity to be consumed, and lessening the ability to consume it. Ah! we are a wise people!—*Ed. of P. L. & A.*



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New Oxfordshire Long Woolled BUCKS for SALE.

The subscriber has about forty Long Woolled BUCKS which he will dispose of at any time when called for. This flock (which has been bred from some of the best ever imported) is so well known they need no further description than to say they continue to yield their very heavy fleeces, from 9 to 16 lbs. of washed wool, and when full fatted will weigh upwards of 300 lbs. alive. This breed of sheep are remarkably healthy and very prolific, and make a very profitable cross with the various breeds of this country, doubling the weight of wool and mutton. The price will be from $50 to $75 for bucks, and $25 to $30 for ewes, according to the quality of the sheep. Gentlemen are invited to call and see for themselves, or communicate by mail.

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The Winter Course of Lectures for 1850 and '51, will be commenced on Monday, October 14th, 1850. The General Introductory will be given by Dr. JAMES MCCLINTOCK. Degrees will be conferred early in March.

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The fee for the respective tickets may be paid to each member of the Faculty, or the whole amount may be paid to the Dean, who will issue a certificate which will entitle the student to the ticket of each Professor.

The SPRING COURSE, for 1851, will commence about the 15th of March, 1851. Degrees will be conferred about the 16th of July, 1851.

For further information, inquire of

JAMES MCCLINTOCK, M. D., DEAN,
No. 1 N. Eleventh St.

PHILADELPHIA, *June* 18, 1850.

PENNOCK'S PATENT SEED AND GRAIN PLANTER.

FOR PLANTING

Wheat, Rye, Barley, Indian Corn, Rice, Oats, Beans, Peas, Ruta Bagas and Turnips.

This machine can be regulated to drop any quantity per acre, at whatever depth required, and operates equally well on all kinds of land. It is so constructed as not to be injured by coming in contact with rocks, roots, &c. For simplicity, durability, and economy, it is unsurpassed by any other agricultural implement in use.

Price $100. A liberal discount allowed to Agents.

READ THE FOLLOWING.

Previous to harvest, we had five acres carefully measured with the chain and compass by W. Pennington, the surveyor of the neighborhood, assisted by John Jones, who saw it all cut, threshed and measured separately, with the following results:

Nos. 1 and 2.—Two acres of broadcast, surveyed together—two bushels of seed to the acre—seventy-five shocks—fifty five bushels of wheat, or 27½ bushels to the acre.

No. 3.—One acre drilled, adjoining the above, the land, if any different, rather inferior; treated exactly alike—one bushel and one peck of seed to the acre—forty-two shocks, thirty-five bushels.

No. 4.—One acre drilled a little distance from No. 3, one bushel and one peck of seed, forty-two shocks, thirty-five bushels.

No. 5.—One acre drilled a little distance from No. 4, one bushel and one peck of seed, fifty shocks, forty bushels to the acre.

Here we see that by the use of the drill alone (the soil being in the same, or perhaps an inferior condition), the crop was increased seven and a half bushels per acre, and adding the amount saved (three pecks), make eight bushels and one peck to the acre; and further, that the amount of straw to the drilled acre, with a smaller quantity of seed sown, increased twelve per cent., and the amount of grain on the same acre was increased more than twenty-seven per cent. * * * * * * The drill used was invented by M. PENNOCK & SONS, of Kennet Square, Chester County, Pennsylvania. Respectfully,

Philadelphia, 10*th Mo.*, 1844. CHARLES NOBLE.

Unionville, Chester Co., Pa., Feb. 8th, 1848.

I do hereby certify that I have used one of Pennock's Patent Drills for five years, and have put in from fifty to seventy acres of wheat for myself every year since, and have never failed having a good crop. I think I can safely say that I have realized from 30 to 50 per cent., or that it has averaged me from $300 to $400, and even $500 a year over the usual broadcast seeding. My land being low, I have lost greatly by the winter throwing the roots entirely out, which is wholly obviated by drilling. I would not take $500 for my Drill if I could not get another of the kind. JOHN HUEY.

Reedville, Mifflin Co., Pa., July 21st, 1848.

I hereby certify that, previous to harvesting, I measured one acre of wheat carefully, as follows: half an acre which had been drilled in with one of your machines, one and a quarter bushels of seed per acre—also half an acre broadcast, from one and three quarters to two bushels of seed per acre, and when cut and threshed, measured as follows:—the half acre drilled wheat thirteen shocks, measured twelve bushels and two quarts. The half acre broadcast eight shocks, measured seven bushels, eighteen quarts. The quality of the land exactly alike, and treated alike previous to sowing the seed. ABNER THOMPSON.

We, the undersigned, were present, saw the land measured, cut the grain, and assisted in threshing the same, and believe the above statement to be correct.

JAS. REED, ALEXANDER REED,
H. G. MORRISON, WILLIAM STEELY,
D. C. MILLER, GEORGE ASHBY.

The subscribers manufacture, and keep constantly on hand, the above machine, together with a general assortment of agricultural implements, such as Ploughs, Horse Powers, and Threshers, Hussey's Reapers, Horse Rakes, Corn Shellers, Fanning mills, &c. Also, Pennock's improved Lever Jack, for raising carriages and wagons; together with steam engines and mill work of every description.

Having an Iron Foundry in successful operation, they are prepared to furnish castings of superior quality at short notice. S. & M. PENNOCK.

Kennet Square, Chester Co., Pa.

Shirly, Va., Nov. 5th, 1849.

Messrs. S. & M. Pennock. * * * * I have used your Patent Seed Drill, and do consider it the most simple and perfect, as well as most complete labour-saving machine I ever saw. It does the work in our lower James River county, of 14 harrows, 12 horses, and 5 good men—(one of them a good seedsman,) with only 3 harrows and 2 smart boys. I am determined to have two of your Drills by next season if possible. * * * *

Most respectfully, yours, &c., HILL CARTER

ALBANY AGRICULTURAL WORKS,

WAREHOUSE AND SEED STORE,

Nos. 369 & 371 Broadway, Albany.

EMERY & CO., PROPRIETORS.

AGENCY FOR THE PURCHASE AND SALE OF IMPROVED STOCK.

Stock Cattle of all the different breeds, Sheep, Swine, Poultry, &c., purchased to order, and carefully shipped to any part of the United States, for which a reasonable commission will be charged.

All letters, post paid, will be promptly attended to.

Address AARON CLEMENT,
Cedar street, above 9th, Philadelphia.

August 1st, 1850.

E. WHITMAN'S

AGRICULTURAL WAREHOUSE AND SEED STORE,

No. 55 Light Street,

BALTIMORE, Md.,

Will contain, this season, the largest stock of Improved Agricultural Implements ever offered for sale in this country, amongst which will be found

☞ 100 Whitman's Superior Wrought Iron Railway Horsepowers, which received the first premium at the last fair of the Maryland Agricultural Society.

☞ 100 Lever or Sweep Powers, among which will be found all the latest improvements.

Also Eddy's or Taplin's Horsepower, which is portable, simple, and durable, consisting of one wheel only.

☞ 200 Whitman's Thrashers, which received the first premium in Baltimore in 1849. The cylinder of this thrasher being all in one piece of iron, will last one hundred years in constant use. A great improvement has recently been made in the teeth or spikes, which makes it the most perfect machine now in use.

☞ 100 other Thrashers, comprising various kinds and improvements.

☞ 7000 Ploughs, consisting of every kind now in use, and a great variety of Cultivators, Cornplanters, Cornshellers, Straw Cutters, Seed Sowers, Grant's, Bamborough's, and various other Wheat Fans, together with every article in the farming line.

Also, a general assortment of

FIELD AND GARDEN SEEDS,

All of which will be sold at wholesale and retail on the most favourable terms.

EZRA WHITMAN.

☞ We shall commence an essay, if we do not finish, in the next number, containing the most exact historical and practical information as to the structure of *plank roads*, with the particulars of all that have been built, that has yet appeared in any form. Companies proposing to build such roads, will do well to look for this essay from a civil engineer who leaves nothing further to be desired on the subject.

"THE WORK GOES BRAVELY ON."

Even a single token like the following, from each Congressional Election District in the Union, would "speed the Plough" in a way that nothing could check. It will, we may trust, be some satisfaction to new contributors to know, that all new subscriptions go now to the support of the editor, as the work now pays its own way; and we take pride in the belief that the medicine we are administering, is operating where the disease which has retarded the progress of agricultural improvement was most virulent and obstinate. See here the evidence from *Tennessee!*—a State that ought to be filling up with immigrants by thousands in the year, under a wise policy that should lead her to weave her own cotton, smelt her own iron, and eat her own mutton and potatoes. Look too, at the fact, that since our last publication of names, we have more subscribers from *Virginia* than even from Pennsylvania. That there, the seducing and delusive cry of "free trade" is becoming every day fainter and fainter, as the farmer and planter begin to *think and reason for themselves.* Truly who shall say that we are not doing something to advance the cause of domestic industry, and therefore entitled, not merely to the good wishes, but, as Governor Trimble says, to "*renewed* and more persevering efforts" of its friends?—to such aid as is here offered by a single *strong arm!*

Knoxville, Tennessee, July 10th, 1850.

JOHN S. SKINNER, ESQ.

DEAR SIR—Enclosed I send you $10. For which, please send, as published, the numbers (one each), of the third volume of "The Plough, the Loom, and the Anvil," to the address of P. M. McClung, Knox county, Tenn.; John H. Henry, D. P. Armstrong, John L. Moses, and John Cock, Jr.

For the zeal and able advocacy of the *true interests* of the American agriculturists, so lucidly and convincingly set forth in the numbers of "The Plough, the Loom, and the Anvil," permit the writer of this to tender you his acknowledgments.

Yery respectfully yours, &c.,

D. P. ARMSTRONG.

TREDEGAR IRON WORKS, RICHMOND, *August* 2, 1850.

J. S. SKINNER, ESQ., PHILADA.

DEAR SIR—You were so obliging as to anticipate my subscription to your interesting and able magazine, "The Plough, the Loom, and the Anvil," by sending me two copies through my friend Mr. Macfarland of this city. I wish every man in the country, who can read, could obtain a copy of your work.

Please send me three additional copies, making five in all, and you will find enclosed my check on the Farmers' Bank of Virginia, for $30, to pay for the five copies for three years, say until 1st July, 1851.

With my best wishes for the success of your valuable paper, and for your own prosperity, I am, with much respect, your ob't serv't,

J. R. ANDERSON.

I will endeavour to extend your circulation. The business is most greatly depressed, and must be exterminated in this State, unless a change be made in the tariff, and that soon.

J. R. A.

Many thanks to the many gentlemen, who, in our absence the last three weeks, have sent us clubs of five or more subscribers.

We take the opportunity to state that of some issues of the last volume, we have extra numbers on hand, one of which will be sent to any one whose name may be given, as of one likely to subscribe, on seeing a specimen of the work.

NEW ENGLAND SUBSCRIBERS, except Rhode Island, are requested to forward their subscriptions for the 3d vol. of P. L. & A., post-paid, either to the office at Philadelphia, or to M. P. Parish, 17 and 19 Cornhill, Boston.

☞ Our exchanges will please send their papers addressed to the AGRICULTURAL ADVERTISER, and not to "The Plough, the Loom, and the Anvil."

Kentucky; 6½c. for Virginia; and 9½ *a* 12c. for Macon County; 19c. for Connecticut seed leaf. Some large sales cigar leaf are reported, on private terms. Manufactured descriptions have advanced one cent, and the market has been cleared of all under 17c. The receipts are falling off, while the stock is light.

The large sales in London and Liverpool of Virginia, as advised by the Niagara, will have considerable effect in Virginia on prices.

DOMESTIC WOOL MARKET.

NEW YORK, *August* 16, 1850.

The sales of the week have been uncommonly heavy and prices are gradually stiffening, although no positive advance on last week's rates can be quoted. We note sales of 400,000 *a* 500,000 lbs. fleeces, among which were 170,000 lbs. fine at 40c.; 50,000 lbs. medium and ¾ blood at 37½c.; 50,000 lbs. do. at 35 *a* 38c.; 50,000 lbs. do. at 32½c. for Canada, at 37½c. for medium and ¾; 19,000 lbs. do., at 33 *a* 37½c.; 5,000 lbs. medium at 36c., &c. &c. Pulled wool has been in good request; but, in consequence of the light stock, sales have been limited. We note sales of 8000 lbs. No. 1 at 33½c. (sold by sample); 3000 lbs. lamb's and No. 1 (mixed) at 34½c.; 6000 do. super lamb's at 37½c. The markets of the Northern cities have also been active. We quote:

American Saxony fleece	43 *a* 45
Full blooded Merino	39 *a* 41
½ and ¾ Merino	35 *a* 37½
Native and ¼ Merino	30 *a* 34
Super pulled country	35 *a* 37
No. 1 pulled do.	32 *a* 33
Super pulled city	32 *a* 33
No. 1 pulled lambs	33 *a* —

COIN IN BANKS.

In proof of the unprecedented plenty of money, the Dry Goods Reporter says of coin held by the banks of four cities, January 1, 1849, and June, 1850, as follows:

SPECIE OF FOUR CITIES.

	Banks of				
	N. Orleans.	N. York.	London.	France.	Total.
Jan., 1849,	6,192,378	7,213,000	71,071,950	52,500,000	136,977,326
June, 1850,	5,302,715	13,878,212	81,161,494	84,472,500	184,814,921
Increase,		6,665,212	10,089,544	31,972,500	47,937,595

At these centres of commerce have accumulated in eighteen months nearly $50,000,000 of specie, or more than the product of California in that period, while at the same time, the £5,000,000 of Russia, contracted in London, has been paid, and also the £800,000 Danish loan.

ONE SORROWFUL EXCEPTION.

☞The New York Dry Goods Reporter says:

"Money continues very abundant all over the world, and particularly so in New York and London, with a constant tendency to increase in abundance."

To the above we are grieved to say ☞*except with him who is here endeavouring to draw together "The Plough, the Loom, and the Anvil!"* So many forget—for we will not believe it to be wilful—to remit their dues, by mail, at *our risk and cost*, as often, and *here again earnestly, requested*—that we can barely get enough to *pay as we go*—and when we can't do that, we shall throw up the "Plough"—No! we will never do that, either; for we will proclaim the doctrine, and do what we can to help the cause for which (with a less perfect view of what is needed for it) we have been labouring all our lives—even if we have to do it from the work-house.

Those who subscribed in clubs can remit the same amount, *at our risk and cost.*

CLINTON, JONES COUNTY, GEORGIA, *July* 22*d*, 1850.

J. S. SKINNER, ESQ.

DEAR SIR:—Enclosed I send Five Dollars for two years' longer continuation of your *Plough, Loom, and Anvil.* Please do me the favour to inform me whether Mr. Carey's entire work on the protective policy (which he calls, perhaps, "Harmony of Interests") can be obtained complete, and at what price. I should like to circulate it among some of my free trade friends; I think it would do more good at the South than any other work, and if the manufacturing interests would devote one-fourth of the time, talent, and money, to promulgate his doctrines at the South, that they do to bring about the same result by restricting slavery, they would in one-half the time get a majority in favour of protection; his doctrine, through your book, has convinced me the protective policy is the correct one, but *all* the North cannot convince me that they have the right to restrict slavery. Please continue to send the numbers to Clinton until further advised; but, please forward any written communication to Griswoldville, Jones County, where I am postmaster.

Respectfully yours.

SAMUEL GRISWOLD.

REVIEW OF THE NEW YORK MARKET,

FOR THE WEEK ENDING FRIDAY EVENING, August 16, 1850.

PRODUCE.—The advices from Europe by the two steamers, Pacific and Niagara, have been very favourable to our cotton market, giving it considerable activity, and producing a rise in prices. Freights, from the increased amount of shipments offering, are rising. Flour and cotton are going forward in considerable quantities. For months past ship owners have had to depend on return freights entirely for remuneration. The tide is now turning, and we expect something resembling the reverse, heavier exports and lighter imports. The rapid decline in our flour and grain market is favouring the disposition to ship. The Pacific's advices announced a declining tendency in the prices of breadstuffs; but the Niagara's advices speak of more firmness.

The potato crop in Ireland is generally reported favourably of, the blight only affecting a portion of the crop in Limerick County.

Our Western advices confirm all the previous accounts of an abundant and widespread harvest. The farmers have made great progress in garnering it; and the markets are feeling the effect in advance of the large supply that must shortly arrive.—*Dry Goods Reporter.*

WHOLESALE PRICES.

FLOUR—	
Genessee	$ 5 62
Baltimore	5 31¼ *a* 5 50
CORN MEAL—	
Brandywine	3 25
Jersey	3 12½
FEATHERS—Tennessee	32
FLAX—Jersey, 6000 lbs.	8 *a* 8¼
GRAIN—	
Wheat—Genessee, new	1 31
Southern, common red	1 06¼
Corn, Southern yellow	65
White	65 *a* 67
HEMP—American dew-rotted	1 15 *a* 1 20
HAY—For new and old, per cwt.	50 *a* 60
HOPS—per lb.	15 *a* 16½

IRON—The market is quiet. A few hundred tons Scotch pig sold at former prices, viz: $19 25 for cash, and $20 20 at six months. English bar is offered at $36 for common, but refused.

LINSEED CAKE.—A buoyant market. Thin oblong is scarce and wanted. Sales of 17 tons at $24 and now held at $25 *a* $26. Thick round is not plenty and is held at $18 *a* $20. The demand for export is fair.

LIME—The market for Thomastown has improved, with a good demand, and sales of 6000 bbls. at 82 *a* 85c. for common, and $1 a $1 05 for lump.

PROVISIONS.—Ohio pork in the early part of the week was firm, with a good local trade, and a steady demand for lots for filling contracts, which gave strength to the market, and holders were able to realize enhanced prices, subsequently with a fair demand for the home trade, and a falling off in the inquiry for filling contracts, prices have receded 12½c. from the extreme prices of Wednesday. The demand has been fair for California, and that for the West Indies has been steady. The sales sum up 5400 bbls. at $10 31¼ *a* $10 44 for mess; and $8 31¼ *a* $8 43¾ for prime; $6 50 *a* $6 62½ for sour prime; $9 75 *a* $9 81¼ for sour mess. Clear is scarce, and firm at $13 *a* $14, but has been in good retail request at $5 *a* $6 for prime; and $8 *a* $10 25 for mess, with sales of 500 bbls. prime mess is easier, and dull; sales of 50 bbls. at $16. Beef hams are dull at $12. Cut meats have been in fair request, in part for Philadelphia, with sales of 60 hhds. Dry hams, 5¾ *a* 6c.; 30,000 lbs. do. in bulk, at 5⅝c; of pickled, 200 bbls. and tierces sugar cured hams at 6¼c. (short time); and 300 tierces dry shoulders at 3⅞c. Lard has ruled firm, but with more disposition to sell. There has been more doing for the East, with a better inquiry for manufacturing. Sales of 2,300 bbls. at 5½c. for grease; and 6⅞ *a* 7c. for fair to extra hard white; and 700 kegs at 7c. Butter is firm, and prime scarce and in demand. Cheese rules dull at 4 *a* 6½c.

PLASTER, per ton, $2 25.

RICE.—The sales of rice have been limited to the home demand, which has somewhat increased within the last few days. We note sales for the week to the extent of 600 tierces, at $3 25 *a* 62½, and a small parcel of very fine at 1-16c. higher. The market closes firm.

SEEDS.—There is but little clover in market, and new is selling at 7¼ *a* 8c. and old at 6¼ *a* 6¾c. Timothy is in few hands. Sales of 18 tierces good Ohio at $17, and reaped in lots, $23 *a* $24 for good prime. Flaxseed is still scarce. A lot of Southern is on the market, held at $1 60. Sicily is held at $1 70. Prices are nominal.

TOBACCO.—The market is active but not sufficient to take off all the receipts of Kentucky, the stock of which is accumulating. The sales are moderate at 7 *a* 8½c. for

VU